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Tuesday  
May 4, 1999

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**Part II**

**Environmental  
Protection Agency**

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40 CFR Part 9 et al.

**Control of Air Pollution From New Motor  
Vehicles; Compliance Programs for New  
Light-Duty Vehicles and Light-Duty  
Trucks; Final Rule**

**ENVIRONMENTAL PROTECTION  
AGENCY**
**40 CFR Parts 9, 85, 86, 88 and 600**

[FRL-6312-9]

RIN 2060-AH05

**Control of Air Pollution From New  
Motor Vehicles; Compliance Programs  
for New Light-Duty Vehicles and Light-  
Duty Trucks**
**AGENCY:** Environmental Protection  
Agency.

**ACTION:** Final rule.

**SUMMARY:** The Environmental Protection Agency (referred to hereafter as "EPA" or "the Agency") proposed a new compliance assurance program (referred to as "CAP 2000") on July 23, 1998. This action adopts revised emissions compliance procedures for new light-duty vehicles and light-duty trucks contained in the NPRM. CAP 2000 simplifies and streamlines the current procedures manufacturers must follow to obtain pre-production emission certification of new motor vehicles. The new certification program provides the same environmental benefits as the current procedures while significantly reducing the certification cost for manufacturers, and giving manufacturers more control of production timing. EPA is also adopting a requirement that manufacturers test in-use motor vehicles to monitor compliance with emission standards. Manufacturers will test samples of in-use vehicles when they are approximately one and four years old. These test data will be used to improve the process which predicts in-use compliance and will determine the need for further action by the Agency or the manufacturer to address any in-use emission compliance problems. CAP 2000 will be implemented beginning with model year (MY) 2001 vehicles. Manufacturers are allowed to voluntarily opt-in to the CAP 2000 procedures beginning with the 2000 model year. EPA estimates that overall, manufacturers will save about \$55 million dollars a year as a result of today's final rule.

**DATES:** This rule is effective May 4, 1999. The information collection requirements contained in 40 CFR part 86, as listed in 40 CFR part 9, have been approved by OMB and are effective May 4, 1999. The incorporation of certain publications listed in the regulations is approved by the Director of the Federal Register as of May 4, 1999.

**ADDRESSES:** Materials relevant to this final rule are contained in EPA Air &

Radiation Docket number A-96-50, located at Room M-1500, Waterside Mall, 401 M Street, SW, Washington, DC 20460. The docket may be viewed at this location between 8:00 a.m. and 5:30 p.m., Monday through Friday. The telephone number is (202) 260-7548 and the facsimile number is (202) 260-4400. A reasonable fee may be charged by EPA for copying docket material.

**FOR FURTHER INFORMATION CONTACT:**

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**SUPPLEMENTARY INFORMATION:**
**Regulated Entities**

Entities potentially regulated by this action are those which manufacture and sell motor vehicles in the United States. Regulated categories and entities include:

Category	Examples of regulated entities
Industry .....	New motor vehicle manufacturers.

This table is not intended to be exhaustive but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities the EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. To determine whether your product is regulated by this action, you should carefully examine the applicability criteria in § 86.1801-01 of title 40 of the Code of Federal Regulations. If you have questions regarding the applicability of this action to a particular product, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

**Obtaining Copies of the Regulatory Documents**

The preamble and Technical Support Document are available electronically from the EPA Internet Web site. This service is free of charge, except for any cost you already incur for internet connectivity. The electronic version of this final rule is made available on the day of publication on the primary EPA Web site listed below. The EPA Office of Mobile Sources also publishes **Federal Register** notices and related documents on the secondary Web site listed below:

1. <http://www.epa.gov/docs/fedrgrstr/EPA-AIR/>
2. <http://www.epa.gov/OMSWWW/> (look in "What's New" or under the specific rulemaking topic)

Please note that due to differences between the software used to develop the document and the software into which the document may be downloaded, changes in format, page length, etc. may occur.

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**I. Introduction**

Three programs are currently in place to ensure that automotive manufacturers design and build light-duty vehicles and light-duty trucks which comply with mandated emission standards for their useful lives (as prescribed in § 86.1805-01): certification, assembly line testing

(known as Selective Enforcement Audits or SEAs) and recall. These programs are described in more detail in section I.A. of the Notice of Proposed Rulemaking (63 FR 39655).

In addition to these emission control programs, EPA shares responsibilities with three other Federal agencies in the conduct of three fuel economy programs: the Corporate Average Fuel Economy (CAFE) program, the Fuel Economy Labeling program (and attendant issuance of the annual Gas Mileage Guide), and the Gas Guzzler Tax program. These programs were likewise discussed in some detail in the above-cited section of the Notice of Proposed Rulemaking (NPRM) for this rule.

The mutual desire of EPA and the automotive industry to streamline and improve upon these compliance programs fostered a productive regulatory development process culminating in the proposed regulation. One of the main elements of the proposal is a streamlined certification program structure which retains EPA's confidence in pre-production compliance determinations while reducing costs for manufacturers. To verify the compliance predictions made for certification, the final rule requires manufacturers to conduct testing of in-use vehicles and to report the results to EPA. The significant amounts of in-use data generated by this testing will enhance the Agency's recall program and can be used for studies of in-use vehicle emission control performance in general.<sup>1</sup> The in-use data will also obviate the need for most SEA testing.

Today's final rule incorporates comments received during the public comment period. Most of the comments received suggested minor wording or procedural changes. No fundamental changes to the basic structure of the CAP 2000 proposal have been made in the final rule. A discussion of certain comments received is contained in section II below. The Response to Comments document in the Docket contains a detailed discussion of other comments received and EPA's responses.

## II. Content of the Final Rule

Unless otherwise indicated below, the discussion presented in the Preamble to the Notice of Proposed Rulemaking published at 63 FR 39653 is applicable to this final rule.

<sup>1</sup> Important in-use data are also available from other sources, including emission control repair statistics and I/M test results.

### A. Certification Requirements

#### 1. Durability Requirements

**Durability Groups.** EPA is adopting its proposal for manufacturers to divide their motor vehicles into groups called "durability groups" which include vehicles which are likely to exhibit similar exhaust emission deterioration over their useful lives, based on those characteristics of current-technology vehicles that most significantly affect the deterioration of emission control over time. Durability groups are based on engine type, fuel type, fuel system, catalyst construction, type of precious metals used in the catalyst, and relative engine/catalyst size and loading rates.

EPA estimates that based on the current vehicle product offering, the number of required durability demonstrations under CAP 2000 will be reduced by as much as 75 percent, a substantial savings for manufacturers. However, the Agency believes that the new durability grouping criteria, the requirement for testing the worst case durability vehicle, and the in-use verification program (also discussed below) would comprise a more accurate and effective emission control program than the current procedures and should result in significant environmental benefits.

To allow manufacturers flexibility in assigning durability groups, EPA is adopting provisions allowing manufacturers to use criteria other than relative engine/catalyst size and loading rates, provided that the criteria result in at least as many groups and do not group together dissimilar vehicles.

**Durability Demonstrations.** The Agency is adopting as proposed its durability demonstration regulations. Each manufacturer (except small volume manufacturers and test groups which have special provisions discussed below) will be required to design a durability process which predicts the in-use deterioration of the vehicles it produces. The durability process will be applied to a worst-case durability vehicle configuration as selected by the manufacturer. While the Agency expects manufacturers to act in good faith in designing adequate durability processes, the Agency requirement to obtain advance approval for these procedures should assure that well-designed programs are implemented.

**In-use Feedback to Durability.** Another important feature of today's rule is the requirement that manufacturers perform in-use testing on candidate in-use vehicles selected under the provisions of the in-use verification program described in section II. B.

below. These in-use verification data will provide feedback information to manufacturers which will be used to improve their durability processes, if necessary.

EPA may also withdraw its approval to use a durability procedure for future certification if the Agency determines that the procedure does not accurately predict in-use emission levels.

**Using aged emission control components to demonstrate compliance.** EPA is adopting its proposal allowing manufacturers to demonstrate both durability and emission compliance by testing emission data vehicles installed with components aged to the equivalent of full useful life. The test data will represent the useful life emission levels for those vehicles, and can be compared directly to the emission standards without the use of deterioration factors. This certification compliance option will save manufacturers the cost of building and accumulating mileage on separate fleets of durability test vehicles. This process uses the same aging techniques as those used to calculate DFs in the normal durability program. Furthermore, the effect of using aged components directly on an emission data vehicle (EDV) is equivalent to applying a deterioration factor to an EDV which is calculated from those same aged components. EPA is also adopting its proposal to allow aged components to be used on more than one vehicle, under certain conditions.

The Agency is also adopting its proposal that the configuration with the highest expected level of in-use deterioration be selected as the durability data vehicle (DDV) configuration.

#### Evaporative/Refueling Durability Procedures

Evaporative family durability procedures were not proposed to be changed, but EPA requested and received comments about the criteria for designating evaporative/refueling families. Based on those comments, EPA is adopting some minor changes to the definition of evaporative/refueling family, described in more detail below.

#### 2. Emission Compliance Requirements

**Test Groups.** EPA is adopting its proposal that manufacturers subdivide durability groups into units called "test groups," for the purpose of demonstrating compliance with emission standards. One certificate of conformity with the emission standards will be issued per test group. Vehicles within a test group will have the following common elements: applicable

emission standards, engine displacement, number of cylinders, and arrangement of cylinders (e.g., in-line or V-shaped). EPA is adopting a number of provisions which allow manufacturers to further divide test groups to meet their needs without advance Agency approval. The Agency will also consider requests to combine test groups.

**Emission Testing.** The Agency is adopting its proposal that manufacturers test one emission data vehicle (EDV) in each test group. The EDV configuration would be the configuration expected to generate the worst case exhaust emissions within the test group.

One EDV per durability group will be required to be tested to demonstrate compliance with cold temperature carbon monoxide requirements, selected by the manufacturer as the worst case EDV within each durability group.

**Evaporative/refueling compliance.** A separate certificate of conformity will be issued for each evaporate/refueling family within a test group.

**Durability and Emission Data Carryover.** "Carryover" is a concept that allows the use of data generated in a previous model year to be used in a subsequent model year in lieu of additional testing. The Agency is adopting its proposal to allow carryover of durability and emission data when the manufacturer determines, using good engineering judgment, that the new vehicle configuration is capable of equivalent or superior emission or durability performance.

EPA is adopting its proposal disallowing the carry over of in-use verification test data. This is discussed separately in section II. B. below.

**Use of Development Vehicles for EDVs.** Currently, the regulations require that a unique vehicle be built to represent the EDV. This requirement was established to assure representativeness of the test results of the EDV. EPA established requirements that the vehicle have appropriate maintenance and sufficient representative mileage accumulation to stabilize emissions. Manufacturers typically run a second fleet of similar vehicles called "development vehicles" which they use to develop the production calibrations. These vehicles may have representative mileage accumulation and appropriate maintenance histories. The Agency is adopting its proposal that manufacturers may optionally use vehicles originally built to be development vehicles as EDVs for official certification testing.

The Agency believes that development vehicles can be representative vehicles which would generate accurate emission levels. The

portability of the calibration from one prototype vehicle to another would be assured by the restriction that a development vehicle which was used to develop the calibration used on the EDV may not be used as the EDV itself.

**Accept Statements of Compliance for Certification Short Tests.** The certification short test was developed to assure that vehicles complying with the FTP exhaust emission standards could be accurately tested at State Inspection and Maintenance (I/M) test facilities without the need for special test procedures. The purpose of the certification short test is also to assure that manufacturers design their vehicles to comply with Inspection/Maintenance (I/M) tests used throughout the country and to account for the variation in test fuels and waiting times that vehicle owners might encounter.

The Agency is adopting its proposal to accept a statement of compliance to satisfy the certification short test compliance requirements (see §§ 86.094-8 and 86.094-9). The certification short test has been fully implemented since the 1996 model year. EPA's review of the CST data submitted by manufacturers thus far has indicated that test results are significantly beneath the standards, with values typically near zero. There have been no instances of test vehicles failing the standards.

**Evaporative/Refueling Emission Testing.** The Agency is retaining the current evaporative/refueling testing requirements. One vehicle in each evaporative/refueling family (the worst case EDV with the worst case evaporative and fuel tank hardware installed) would be tested for compliance with the evaporative and refueling requirements subject to the phase-in requirements of the applicable model year.

### 3. Confirmatory Testing

**Manufacturer-performed confirmatory testing.** The Agency is adopting the proposed requirements for certification and fuel economy confirmatory testing. Manufacturers will confirm most of their tests at their own facilities, if any of the following criteria originally proposed are met: (1) the vehicle version has previously failed a standard; (2) the vehicle exhibits high certification levels; (3) the fuel economy value of the vehicle is higher than expected; (4) the fuel economy value is close to a Gas Guzzler Tax threshold value; or (5) the fuel economy value is at a level which creates a potential vehicle class fuel economy leader. EPA will provide guidance to manufacturers on these criteria. Test results from the original manufacturer's test must be submitted

to the Agency before any manufacturer confirmatory testing is conducted. The Agency will then indicate to the manufacturer whether the Agency will be performing any random or other confirmatory testing. Vehicle configurations selected for confirmatory testing by the Agency will not be required to be tested under the manufacturer confirmatory test program. Manufacturer confirmatory tests will be considered "official" and will be used in certification compliance determinations and fuel economy calculations. Any confirmatory tests performed by EPA will be considered official.

The Agency is also adopting its proposal that manufacturers conduct retests whenever the manufacturer's original fuel economy test result and the manufacturer's confirmatory result fail to correlate satisfactorily. The criteria for satisfactory correlation is the three percent difference in fuel economy currently used in EPA's confirmatory test program. In lieu of conducting retests the manufacturer may accept the lowest fuel economy data for the purpose of calculating the fuel economy values. This retesting procedure assures that representative fuel economy data are generated during the manufacturer-funded confirmatory test program. The retest criteria are the same that the Agency has been employing on EPA retests. These have proven satisfactory at safeguarding the integrity of the fuel economy values at a reasonable cost in terms of additional tests conducted.

**Conditional Certification pending Confirmatory Testing.** EPA is adopting its proposal to allow conditional emission certification for a test group (contingent upon manufacturer request and subject to Agency approval) when the confirmatory test scheduled for testing at the EPA facility has not yet been completed. To be eligible, the manufacturer must attest, and EPA have reason to believe, that the vehicle awaiting confirmatory test will ultimately comply with the standards when tested.

The condition for certification is the same as that for the current "alternate procedure" running change provisions (see § 86.082-34). If the Administrator determines that the confirmatory test results in noncompliance with any standard, then the manufacturer will be so notified. Upon notification of this determination, the manufacturer must immediately suspend production of all vehicles covered by this certificate (or such fraction of the vehicles covered by the certificate that the Administrator determines to be affected) and the certificate of conformity will be

suspended (pending a hearing). As a further condition of the certificate, the manufacturer must agree to recall all vehicles which the Administrator determines to be in noncompliance with the applicable standards, and remedy such noncompliance at no expense to the owner.

#### 4. Fuel Economy

*Conditional Fuel Economy Values Pending Confirmatory Testing.* In addition to conditional certification, EPA is adopting its proposal allowing the use of conditional fuel economy labels. Manufacturers are permitted to calculate and use fuel economy labels prior to the completion of scheduled EPA confirmatory testing, provided that certain conditions are met.

Once the confirmatory testing is completed, the manufacturer must recalculate, if necessary, all the affected fuel economy label values. The recalculated label values must be used for labeling on future production under either of the following circumstances:

(1) If the newly calculated label value is at least 0.5 mpg lower than the original value, the manufacturer must use the recalculated label value and annual fuel cost on the labels placed on all future vehicles produced 15 days, or more, after the completion of the confirmatory test.

(2) If the newly calculated label value is at least 0.1 mpg lower than the original value, the manufacturer must use the recalculated label value to determine Gas Guzzler Tax liability. The tax paid to the IRS must reflect the recalculated value for all vehicles produced. The gas guzzler tax statement required under the current provisions of 40 CFR 600.307-95(f) to be placed on the fuel economy label shall reflect the recalculated values on all future vehicles produced 15 days, or more, after the completion of the confirmatory test.

All confirmatory test results must be used in CAFE calculations.

EPA is adopting its proposal requiring manufacturers to submit a copy of the CAFE calculations directly to the National Highway Traffic and Safety Administration (NHTSA) concurrent with the submission to EPA.

#### 5. Small Volume Provisions

EPA is adopting its proposal to increase the number of sales which define small volume manufacturers to U.S. sales of less than 15,000 per model year (including light-duty vehicles, light-duty trucks, heavy-duty vehicles and heavy-duty engines). Similarly, EPA is adopting its proposal to allow any manufacturer to use small volume

certification procedures for any test groups, provided that the combined U.S. sales are below 15,000 units per model year.

Any certification options provided under CAP 2000 for large volume manufacturers would be available to small volume manufacturers (e.g., bench-aged components for durability, etc.).

#### 6. Information Requirements

*Application for certification.* EPA is adopting its proposal that manufacturers submit applications for certification on the basis of durability groups. The application will be submitted in two parts:

Part 1 consists of general information about the manufacturer and the entire product line, durability group descriptions, evaporative/refueling family descriptions, OBD information and information specific to each test group. This is the information generally needed by EPA to make certification decisions.

Part 2 is information which is primarily needed by EPA for post-certification compliance purposes. It includes such information as part numbers of each emission related component for each engine code, certain calibration specifications, owners manuals, service manuals and technical service bulletins. This information is necessary for the Agency to perform its in-use compliance activities such as identifying mis-builds (non-certified vehicle configurations), evaluating manufacturer defect reports, and conducting in-use recall testing programs.

*Timing of information submissions.* Part 1 of the Application is to be submitted prior to certification and Part 2 is to be submitted by January first of the applicable model year (e.g. a model year 2001 Part 2 Application would be due by 1/1/2001). Any updates to the Part 1 will also be due by January first of the model year.

A final, end-of-model-year Application update (including any updates to Parts 1 and 2 reflecting any running changes occurring since January 1 is required to be submitted by January first of the following model year (for example, the final Application update for model year 2001 would be due by 1/1/2002).

Based on comments received, EPA is increasing the time allowed to submit the Part 2 application from 30 days to 60 days for those test groups certified close to the end of January 1 of the applicable model year.

#### B. In-Use Testing Requirements

##### 1. Overview

EPA is adopting the in-use testing program generally as proposed. The program consists of two basic categories of manufacturer-funded in-use testing: (1) in-use verification testing of vehicles representing virtually all of the test groups produced by each manufacturer in each model year and, (2) in-use confirmatory testing consisting of more rigorous testing of test groups or subsets of these test groups (limited to transmission types) which, during the in-use verification testing, demonstrated potentially high emissions.

##### 2. In-Use Verification Testing (IUVP)

This element of the program will provide the Agency and the industry with emission data feedback from vehicles driven under real-world conditions. The data generated from the IUVP will be used to assess and improve the effectiveness of the manufacturer's certification durability and emission demonstration processes. In addition, the IUVP data will be used to determine the need for further manufacturer funded in-use testing (In-Use Confirmatory Testing) which may be used by the Agency in determining whether an emissions recall is necessary.

The basic elements of the proposed IUVP are low mileage (10,000 mile minimum vehicle mileage, approximately one year of operation) and high mileage (50,000 mile minimum mileage and approximately four years of operation) emission testing of in-use vehicles. These mileage and age test points were selected to provide feedback to the Agency and the industry on the emission performance of vehicles at both an early point in their operating life (to allow early identification of any problems which occur in production or early in the life of the vehicle to minimize the emission impact of the defect or deficient design), and at a point well into the vehicle's statutorily-defined useful life (to identify and correct any problems which occur only after extended in-use operation) but not at such a high mileage that high emitting vehicles would not be identified until the end of their useful life. The total number of vehicles a particular manufacturer would be required to test for the IUVP under the requirements of this proposal would be dependent upon the number of test groups in the manufacturer's product line and the number of sales within those groups. The sample sizes required for the low and high mileage test programs and test group sales volumes

are intended to reflect the increased potential for emission contribution by high production test groups, the increased likelihood of problems occurring as vehicles reach higher mileage, and the desire of the Agency to minimize the resources required to conduct the program.

Additionally, EPA is adopting its proposal that a manufacturer may increase the required sample size specified for a specific IUVP test group sample with prior EPA approval prior to the initiation of the additional testing. The Agency believes that prior approval of an increase in sample size is needed to prevent the unrestrained addition of vehicles which could mask or dilute potential emission problems.

EPA was requested to change the proposed requirement that one high-mileage vehicle in the in-use verification fleet have at least 75,000 miles to be at least 75 percent of full useful life. This purpose of the request was to harmonize with the California ARB proposed regulations, and EPA has done so in the final rule.

EPA is adopting its proposed regulations for vehicle selection and procurement protocols. These procedures and protocols provide assurance that the in-use vehicles will have experienced typical real-world use and maintenance, and will screen out only those vehicles which are tampered, unsafe to test, or are in such a condition that restoration to a test-ready condition would be too costly. To preclude underestimating the emissions of the in-use fleet through possible climate-related bias (the Agency believes vehicles operated primarily in warm weather areas may be subject to less harsh durability conditions than those operated in cold weather), and on the basis of a comment received, EPA has modified its proposal requiring that a certain number of vehicles in each sample be procured from north of the 40 degree parallel line. Instead, those vehicles must be procured from locations with a heating degree day 30 year annual average equal to or greater than 4,000. The reasons for this change are discussed in section D.1. below.

As discussed above in section II.A., in the event that the IUVP data from a test group sample at either the low or high mileage test point exceed certain criteria, EPA is also requiring that manufacturers perform an analysis explaining why their durability processes are or are not still capable of accurately predicting in-use performance. EPA is also adopting as proposed its provisions for the in-use testing of small volume manufacturers/ test groups and alternative fueled vehicles.

EPA is adopting its proposal that the FTP and the US06 portion of the supplemental FTP (SFTP) be performed on each in-use vehicle tested. Manufacturers will determine the composite in-use SFTP emission level by combining the in-use US06 and in-use FTP test levels with the test level from the pre-production certification air conditioning test (without deterioration factors applied). The A/C portion of the supplemental FTP is an extremely resource intensive test because of the test cell requirements (a special environmental chamber). In evaluating the utility of the data which would be obtained versus the high cost of conducting an in-use A/C test cycle as part of the in-use verification program, EPA decided not to require testing on the A/C cycle. Included in this evaluation was EPA's belief that for emissions deterioration purposes, the US06 portion of the test can be directionally predictive of the results of the A/C cycle. EPA may always conduct its own in-use testing to confirm compliance, and if future indications are that noncompliance with the A/C cycle may be an issue, can revisit this decision in a future regulation.

EPA is adopting its proposal requiring a single in-use evaporative test and on-board refueling loss test per evaporative/refueling family at both the low and high mileage test points. As of this final rule, ongoing evaporative test procedure streamlining efforts between EPA, California ARB and industry have not led to a unified procedure. Therefore, EPA is adopting its proposed in-use evaporative/refueling testing requirement using the test procedures described in subpart B of part 86.

Because EPA's emission standards currently apply at high altitude as well as low altitude, EPA is adopting its proposal that one vehicle per test group be tested under high altitude conditions for FTP. EPA is proposing to require this testing only at the high mileage test point in order to minimize the expense and facility constraints, if any, associated with this testing.

3. Manufacturer Funded In-Use Confirmatory Testing

Today's final rule also includes regulations which create a manufacturer funded in-use confirmatory testing program. These are unchanged from the proposed rule. This program requires manufacturers to conduct additional in-use testing of a test group when the IUVP data for the test group exceeds a specified trigger level. Additionally, EPA could target testing of a transmission-type subset of a test group if emissions shown by the entire test

group sample meet the specified triggering criteria.

The criteria that will trigger confirmatory testing (a mean of 1.30 times the standard with a 50 percent or greater failure rate for the test group sample at either the low or high mileage test point) are based upon the emission standards to which the test group was originally certified.

The Agency intends to periodically review and, if necessary, revise these criteria, and intends to do so after it has gathered sufficient information to support any revisions.

C. Other Requirements and Topics

1. Fees

EPA is adopting its proposal to continue collecting a fee on a per-certificate basis. Because the test group will become the unit of certification, a fee will be collected for each test group to be certified. The new fee schedule will be the same as proposed:

Federal signed .....	\$27,211
California only signed .....	8,956
Fed only unsigned .....	2,738
Cal only unsigned .....	2,738

EPA is adopting its proposal to retain the waiver provision in the current fee regulations when the fee exceeds 1% of the aggregate projected U.S. sales of vehicles covered by the certificate (§ 86.908-93).

2. Miscellaneous Corrections and Changes

EPA is adopting other requirements as proposed, including language prohibiting crankcase emissions from all light-duty vehicles, rather than from Otto-cycle and methanol-fueled diesel light-duty vehicles, the elimination of high altitude exemption provisions for those vehicles and trucks meeting specific design limitation criteria (see §§ 86.094-8(h) and (i)), and a revision making the Agency's defeat device policy applicable to all types of fuels rather than just to gasoline.

3. Incentives To Encourage Better In-Use Emission Performance

The Agency is adopting its proposed regulatory language that will allow the Agency to waive or modify certain other regulatory requirements to allow the structuring of an incentive program. In the NPRM, the Agency requested and received a number of suggestions regarding potential incentive rewards, and how an incentive program could be structured (discussed in more detail in the Response To Comments document in the docket). EPA will continue to work with interested parties in

developing an effective incentive program.

#### 4. Cross References in Other EPA Regulations

EPA has amended regulatory language which refers to Subpart A of Part 86 so that it also references Subpart S. Regulations affected include Part 85, subparts B, G, H, L, P, Q and R of Part 86, Part 88, and Part 600. Also, each part or subpart which includes the terms "engine family" and/or "engine control system" has been amended to clarify that those terms can be construed to mean "test group" or "durability" group in the context of Subpart S regulations.

#### D. Changes From the Proposed Rule

EPA is adopting as final its proposed rule, with a few minor changes and corrections. The most significant changes are discussed below. A more detailed discussion about the comments received is in the Response to Comments document in the docket for this rule.

#### 1. 40 Degree Latitude Requirement for In-Use Verification Vehicle Procurement

EPA proposed that at least a certain number of vehicles in each test group be procured from north of the 40 degree parallel line to preclude underestimating the emissions of the in-use fleet through possible climate-related bias. The 40 degree north latitude requirement contained in the proposed regulations was intended to address the Agency's belief that vehicles operated primarily in warm weather areas may be subject to less harsh durability conditions than those operated in cold. The 40 degree line extends across the United States from Cape Mendocino, CA to Trenton, NJ. Major metropolitan areas in this region account for about 24% of the U.S. population. Vehicles could be procured from any area above the 40 degree latitude line. While this criterion captures a significant portion of cool weather areas, it did exclude a few major metropolitan areas which EPA would consider to be cool and would not wish to exclude from participation in the in-use verification program. Since the proposal, EPA has determined that there is a more scientifically-based method to ensure the acquisition of cooler-climate in-use vehicles, which will allow for the inclusion of previously excluded areas, and conversely, will not exclude any significant geographic areas where in-use vehicle procurement would likely occur. This method involves using readily available climate data known as "annual average heating degree day"

(HDD) data. This data is compiled by various agencies, including the National Climatic Data Center (NCDC) of the National Oceanic and Atmospheric Administration (NOAA) and the Energy Information Administration (EIA) of the Department of Energy (DOE), and is readily available from these Agencies, both electronically and in hard copy. The Department of Energy, defines a heating degree day as "the number of degrees per day that the daily average temperature (the mean of the maximum and minimum recorded temperatures) is below a base temperature, usually 65 degrees Fahrenheit, unless otherwise specified \* \* \*".

Instead of procuring vehicles from above the 40 degree N latitude line, manufacturers will instead be required to procure vehicles from areas with at least 30 year annual average HDDs of 4,000. Four thousand was chosen as the criterion because limiting the criterion to areas with higher annual HDDs (for instance, 5,000) would exclude some major metropolitan areas that would have been covered with the 40 deg. latitude criterion and which EPA considers to be cooler climate areas, such as New York City, Newark, NJ, Seattle, WA, and Portland, OR., which the Agency did not intend to exclude. In fact, the 4,000 annual HDD criteria will now include formerly excluded major metropolitan areas as well, such as the Baltimore-Washington corridor. Overall, the area of the United States covered by the criteria is more extensive than the area defined by the 40 degree latitude line and will ensure that in-use test data is obtained from vehicles exposed to harsher weather. Additional major metropolitan areas now included in Missouri, Illinois, West Virginia, Colorado, Utah, Kansas, Arizona, New Mexico, Oklahoma, and Kentucky. Major metropolitan areas in this region account for about 30 percent of the population. This change is also responsive to a comment received, discussed in more detail in the response to comments document. Accordingly, EPA is revising its regulations.

#### 2. NLEV and CAP 2000

The California ARB has adopted a regulation parallel to CAP 2000. This will supercede the current ARB regulations which apply to NLEV-certified vehicles. Accordingly, EPA has modified the NLEV regulations in subpart R of part 86 to accommodate the incorporation of the California ARB CAP 2000 regulations into the NLEV certification process.

An incorrect cite was inadvertently given in section 86.1801-01 of the proposed regulatory language, which

referred the reader to Subpart A for NLEV requirements. This has been corrected.

Regulatory language contained in § 86.096-30 pertaining to NLEV certification was inadvertently omitted in CAP 2000 and has been added back under § 86.1848-01.

#### 3. High Altitude In-Use Testing

The preamble language for the NPRM incorrectly stated that EPA was not proposing to include the results of high-altitude in-use verification testing in the data to be used to determine if a test group met the 1.30 times the standard criteria (modified from the 1.3 in the proposed rule to preclude rounding errors) which triggers manufacturer in-use confirmatory testing. The proposed regulatory language did reflect the Agency's intention to include high altitude data in the calculation. The inclusion of high altitude data is appropriate given that the emission standards are "all altitude," which require compliance to the same numerical standard regardless of altitude.

#### 4. Regulatory Language Section Numbering

Comments were favorable about the general layout and numbering scheme in the proposed rule. EPA is retaining this layout, but has renumbered (but not reordered) a portion of the final regulatory language to leave some blank "Reserved" sections. Doing so gives the Agency more flexibility in accommodating any future regulations and is in keeping with the Administration's "Plain Language" directive which suggests that Agencies leave reserved sections in new regulations for that purpose.

#### 5. Evaporative and Refueling Durability Procedures

A commenter requested that EPA clarify its language on the service accumulation methods for both evaporative and refueling durability procedures.<sup>2</sup> Specifically, it was requested that EPA allow bench aging procedures as an alternative durability method. While EPA believes that the proposed language allows for such methods, language specifically permitting bench aging for evaporative and refueling durability procedures has been added to the final rule for clarity.

#### 6. High Altitude Certification Testing for Evaporative and Refueling Compliance

The proposed regulations incorrectly included SFTP testing at high altitude

<sup>2</sup>Ref. comments.

as part of the evaporative/refueling test requirements. Because SFTP standards are not applicable at high altitude, the final rule has deleted the requirement for SFTP testing.

#### 7. Stabilized Vehicle Requirements

The proposed regulatory language allowed manufacturers to consider vehicles with 2,000 miles accumulated on them as "stabilized" for emission testing purposes. A commenter requested the EPA clarify that this is a minimum mileage.<sup>3</sup> Because this was EPA's intention, EPA has modified the language accordingly.

#### 8. Evaporative/Refueling Family Determination.

Both during the development of the NPRM and in comments received after the proposal, EPA was requested to revisit the regulatory criteria for determining evaporative/refueling families. EPA is adopting some of these suggestions in the final rule. In particular, it is adding the criterion of fuel tank composition, and deleting the criteria of fill limiter system, vapor/liquid separator, vapor hose diameter, canister location, and onboard diagnostic hardware and calibrations. EPA believes that the eliminated criteria are calibrational in nature and have less impact on the durability of the evaporative/refueling system. These changes are not expected to significantly increase or decrease the number of evaporative/refueling families, thus no change is being made to the cost analysis.

#### 9. Evaporative/Refueling In-use Verification Testing

In the preamble to the NPRM, EPA inadvertently stated that the in-use verification testing for evaporative/refueling emissions would not begin until the 2004 model year. The proposed regulatory language, which is correct, requires evaporative/refueling in-use testing to be performed on 2001 model year vehicles for the high mileage testing (50,000 miles/fourth year of service, meaning that the first testing will not occur until the 2004/2005 calendar year time frame). Because EPA has delayed implementing all low mileage in-use testing until the 2004 model year, this will provide a number of years of lead time for manufacturers to acquire or arrange for the necessary evaporative/refueling testing facilities.

#### E. Comments Relating to EPA's Legal Authorities and Factual Basis for CAP 2000

EPA received comments from two organizations<sup>4</sup> challenging whether EPA has met its statutory obligations and claiming EPA failed to provide a factual basis for the CAP 2000 proposal. The following discussion details the specific comments and EPA's responses.

##### 1. Comment

Commenters suggested that EPA's proposal fails to establish methods and procedures for testing, "by regulation," as required by section 206(d) of the Clean Air Act. Commenters claim that to be consistent with section 206, EPA must either aggregate the manufacturer-specific test procedures in the certification regulations it proposes for public comment, or require that manufacturer-specific test procedures be developed by regulation on a case-by-case basis only after public notice and opportunity for comment.

##### EPA's Response

Section 206(a)(1) states that the Administrator shall test, or require to be tested in such a manner as deemed appropriate any new motor vehicle or motor vehicle engine submitted by a manufacturer to determine whether such vehicle or engine conforms with EPA emission standards. Section 206(d) requires that EPA issue regulations that establish methods and procedures for making tests under section 206.

The regulations proposed by EPA would require that manufacturers develop programs demonstrating the durability of their emissions control systems, as part of demonstrating compliance with applicable emission standards. The regulations establish the criteria for EPA approval of a durability program, and provide for required in-use testing to check on the accuracy of the durability demonstration. EPA's proposed regulations describe design requirements each manufacturer's durability program must satisfy for EPA approval. Manufacturers are required to show that their durability processes are designed to cover a significant majority of deterioration rates expected by vehicles in actual use. These durability demonstration programs are used in the certification process to establish the general rate of emission deterioration a similar group of vehicles are expected to experience over time. This rate of deterioration is applied, via deterioration factors or other means, to data generated from emission test vehicles within the durability group to

demonstrate whether a vehicle will meet emission standards over its useful life. In essence, EPA's proposed regulations would establish a case-by-case, adjudicatory process and criteria for acceptance or rejection of a manufacturer's durability program. Commenters' claim that this is unlawful under section 206(d), and that EPA's regulations must themselves contain the specific details of each manufacturer's durability program (whether adopted in a single, aggregate rulemaking, or future case specific rulemakings). The issue raised by commenters is therefore whether EPA may reasonably exercise its authority under section 206(d) to establish an adjudicatory type procedure as proposed.

Whether section 206 authorizes or prohibits such agency action is a matter of statutory interpretation. The first question is whether Congress has directly spoken to this issue, such that Congressional intent is clear on this specific matter. If the intent of Congress is clear regarding a statutory provision, the Agency must follow that intent. If Congress' intent is not clear on this specific issue, then the question is whether EPA's interpretation of section 206(d) is a reasonable way to implement the authority delegated in that provision. *Chevron v. NRDC*, 467 U.S. 837, 842 to 844 (1984). Traditional tools of statutory construction are used to answer these questions. *Id.*

This issue can be seen as two distinct questions. The first is whether establishing methods and procedures by regulation requires that all the specific details related to testing must be contained in the regulations themselves, prohibiting establishment of an adjudicatory process to determine these specific details. The second question is whether a durability demonstration program is part of "making tests" subject to the requirements of section 206(d).

For the first question, the terms used by Congress, "establish methods and procedures," are not defined in the Clean Air Act. These terms are general in nature, and can be readily interpreted as covering a broad range of agency action. "Methods" and "procedures" would encompass both detailed prescriptions of how to conduct a test, as well as broad general provisions, such as a requirement that testing be conducted using good engineering practices. These terms are broad enough in nature to include a process for future determination of the specific details of a test program, based on submission of a proposed program for EPA review according to pre-set criteria. The term

<sup>3</sup>Ref. comments.

<sup>4</sup>The Ethyl Corporation and Envirotec.



“establish” also appears general enough to include both the establishment of detailed specifics at one time, as well as establishment of a process to set detailed specifics at a future point. The text of section 206(d) does not appear to indicate a clear congressional intent to prohibit the adjudicatory approach proposed by EPA, but instead employs terms that are broad and general in nature, allowing a variety of potential ways to establish methods and procedures for testing. The legislative history is limited, and does not provide any indication of a contrary congressional intent. Clean Air Amendments of 1970, Conference Report No. 1783, 91st Congress, 2d S (1970).

In this case, Congress did not express a clear intent that EPA may not exercise its authority under section 206(d) by setting up an adjudicatory process in the regulations. Instead, Congress's grant of authority provides EPA with substantial discretion in how to “establish methods and procedures” for conducting tests under section 206(d). Since Congress has not specifically addressed the question at issue, EPA's interpretation of this grant of authority should be upheld if it is a reasonable way to implement Congress' intent. *Chevron* at 844.

The adjudicatory process set up by EPA's regulations is an efficient way to benefit from each manufacturer's expertise and knowledge of the durability of their vehicles. For example, manufacturers will be able to tailor their vehicle aging procedures to the specific details of the hardware used on their vehicles, and the way it is expected to deteriorate over time, as well as any unique driving and usage patterns of their customers, and thus account for the effect that these hardware and usage patterns have on emission deterioration and emission control system designs. As discussed in the NPRM (63 FR 39660, (July 23, 1998)), EPA believes that the resulting manufacturer durability programs should improve the effectiveness of EPA's vehicle compliance programs, by improving the ability of the new motor vehicle certification program to predict and account for in-use durability and deterioration of the emissions control system.

As described in the NPRM, EPA has been approving manufacturer alternative durability programs under RDP-I for several years. Two major types of durability processes have emerged from the RDP-I experience: whole vehicle mileage accumulation cycles and bench aging procedures. The whole vehicle aging concept involves

driving vehicles on a track or dynamometer on an aggressive driving cycle of the manufacturer's design. The bench aging procedures involve the removal of critical emission components (such as the catalyst and oxygen sensor) and the accelerated aging of those components on an engine dynamometer bench. Through the approval process, EPA has been requiring that manufacturers compare the catalyst operating temperatures during the AMA<sup>5</sup> and during the proposed durability method as well as average speeds, acceleration rates and the like for whole vehicle methods. In evaluating the comparisons, EPA believes that the programs are more effective than the current program at predicting the deterioration that occurs in actual use. EPA believes that allowing manufacturer-specific durability programs to continue is appropriate.

As it has in the past under the RDP-I program, EPA will require that manufacturers provide data prior to certification showing that the aging procedures would predict the deterioration of the significant majority of in-use vehicles over the breadth of their product line which would ultimately be covered by this procedure for both whole vehicle and bench-aging durability methods. Manufacturers have varying sources of data available, such as emissions data, driver survey data, catalyst temperature history data and catalyst conversion efficiency data. Generally these data are compared to manufacturer in-use data to determine how broadly the deterioration factors reflect the overall vehicle fleet. EPA determines, based on these data whether to approve the durability process. EPA believes that the various whole vehicle and bench aging programs are more effective than the current program at predicting the deterioration that occurs in actual use.

EPA also believes an adjudicatory process is a more efficient method of reviewing and approving or rejecting such durability programs, avoiding the time and resources that would be necessary to promulgate by rulemaking each manufacturer-specific durability program. EPA believes that the adjudicatory process proposed and adopted in this rule is a reasonable way to establish manufacturer-specific durability programs that are expected to provide better information about in-use emissions deterioration, for use in making certification decisions.

EPA's interpretation of the statute is consistent with prior EPA interpretations of section 206. For example, EPA has never interpreted section 206 as requiring promulgation of every aspect of each manufacturer durability program. In the past, the regulations have set up a durability process that required manufacturers to accumulate mileage on a pre-production vehicle over a prescribed driving cycle from 100,000 miles as a way to simulate deterioration over the useful life. The regulations described the driving course, the speed for each lap, stops, and similar details. The regulations do not describe when drivers must be changed, how much driving per twenty-four hours, leaving many other details for case-by-case decision making by EPA. Another example is 40 CFR 86.090-27, Special Test Procedures. Under this section, EPA interpreted section 206 to allow the Administrator, based on a written application from a manufacturer, to prescribe tests procedures, other than those prescribed in the CFR, for a vehicle not susceptible to satisfactory testing in 40 CFR part 86. This is an adjudicatory process where the EPA approves alternative testing in advance, without promulgated minimum requirements.<sup>6</sup> Another example is EPA's durability regulations for certification of light-duty trucks, which have permitted manufacturers to use their own methods, based on good engineering judgment, to determine DFs, subject to review and approval by EPA. (See § 86.094-24(c)(2)). EPA set up this adjudicatory process in the regulations, providing future case by case EPA approval of the results of a manufacturer's durability program.

In sum, EPA does not believe that Congress intended to prohibit reasonable regulations under section 206(d) that set up an adjudicatory process to review and approve manufacturer specific durability programs. EPA believes that the process set up in the regulations is a reasonable exercise of the general authority provided to EPA in section 206(d).

The second issue raised by the comment is whether a manufacturer's durability program is part of making a test such that it is subject to the requirements of section 206(d). However, EPA does not believe that it is necessary to decide this issue. If durability processes are subject to section 206(d), then as described above EPA believes it has the authority to allow an adjudicatory process to

<sup>5</sup>The driving schedule prescribed in Appendix IV of Part 86.

<sup>6</sup>EPA's regulations have included this kind of provision for approval of alternative test procedure for many years.

determine the specific, detailed portions of a manufacturer's durability program. If the manufacturers' durability processes are not subject to the requirements of section 206(d), then EPA's regulations clearly do not violate that provision. In either case, EPA believes it has authority under section 206(a)(1) to require durability programs as part of the testing performed for purposes of certification. Section 206(a)(1) allows EPA to require testing "in such a manner as he [the Administrator] deem appropriate." This provides EPA the discretion to require manufacturer specific durability programs as part of the certification process.

## 2. Comment

Commenters stated that EPA's proposal is contrary to section 206(e), which obligates EPA to disclose certification information allowing purchasers to determine the "comparative performance" of vehicles. Congress contemplated a form of "environmental" competition among automobile manufacturers. Commenters claim that the competition has not developed, at least in part, due to EPA's decision to "maintain the secrecy of the certification test procedures." EPA Air Docket #A-96-50 item IV-B-10 at 6. Comparisons cannot be made without an accurate understanding of the test procedures employed to generate the certification emission data.

## EPA Response

Section 206(e) provides that:

The Administrator shall make available to the public the results of his tests of any motor vehicle or motor vehicle engine submitted by a manufacturer under subsection (a) of this section as promptly as possible after December 31, 1970, at the beginning of each model year which begins thereafter. Such results shall be described in such nontechnical manner as will reasonably disclose to prospective ultimate purchasers of new motor vehicles and new motor vehicle engines the comparative performance of the vehicles and engines tested in meeting the standards prescribed under section 7521 of this title.

Section 206(e) of the Clean Air Act requires EPA to make available to the public the *results* of tests of any motor vehicle or motor vehicle engine submitted by a manufacturer under section 206(a). Congress' intent is clear by looking at the words of the statute. Congress did not require that EPA make available the specific details of test procedures employed to generate the emissions data, or the durability programs employed in the certification process. Congress stated that the results

of the tests are to be made available to the public.

EPA makes available all emission test data which are used to make certification compliance determinations as required by section 206(e). Certification levels are posted annually at <http://www.epa.gov/OMSWWW/gopher/Cert/Veh-cert/Cert-Tst/>. The report contains certification levels (projected emission levels at the end of the useful life miles of a vehicle) and deterioration factors used to compute the certification levels. Vehicles are described by vehicle model, EPA engine family name, manufacturer family name, number of cylinders, method of fuel system, emission control system, engine code, etc. EPA believes the information is described in a nontechnical manner and provides purchasers with enough information to compare performance of vehicles in meeting emissions standards.

In any case, the regulation adopted today establishes an adjudicatory process to implement section 206 (a) and (d), and provide reasonable information to make certification decisions. The regulations adopted here were not proposed under and are not meant to implement section 206(e). The kind of information presented to the public under section 206(d) is not at issue in this rulemaking, as this regulation neither releases information to the public, nor limits what information may or may not be released in the future under section 206(e).

## 3. Comment

Commenters suggest that Congress clearly contemplated that EPA would require testing of new motor vehicles or new motor vehicle engines to ensure compliance by the vehicle or engine with applicable emission standards. New motor vehicles are equipped with new components, not with one or more artificially aged components. Because EPA's proposal would allow testing of what is in essence a "hybrid" vehicle which includes such components, EPA's proposal is facially inconsistent with the clear mandate of section 206.

## EPA Response

Section 206(a)(1) states that the Administrator shall test, or require to be tested "in such manner as he deems appropriate," any new motor vehicle or new motor vehicle engine submitted for a certificate of conformity with emission standards. "New motor vehicle" is defined in section 216 as a motor vehicle the equitable or legal title to which has never been transferred to an ultimate purchaser." In section 216

"new motor vehicle engine" is defined similarly.

The authority to require testing "in such a manner as he deems appropriate" under section 206(a)(1) clearly provides EPA with the discretion to allow bench-aging of components as part of the procedures to prepare a vehicle for durability related emissions testing. As described before, it is a reasonable exercise of this broad authority provided in section 206(a)(1) for EPA to determine that bench aging of components may be approved as part of a manufacturer's durability program. EPA also has general authority under section 301(a)(1) to approve the use of such components on durability test vehicles. ("The Administrator is authorized to prescribe such regulations as are necessary to carry out his function under this chapter.")<sup>7</sup>

## 4. Comment

Commenters claim that before EPA can demonstrate that each bench-aging or alternative whole vehicle aging technique complies with the substantive requirements of section 206, the Agency must first provide a complete and thorough description of each bench-aging or alternative whole vehicle-aging technique proposed to be allowed. Without this information, it is simply not possible to comment upon the merit of the alternative testing techniques.

## EPA Response

The comment is based in part on the view that each manufacturer-specific durability process must be adopted through rulemaking. As discussed previously, EPA believes that a regulation setting up an adjudicatory process for approval of manufacturer-specific durability programs is not prohibited by the Clean Air Act and therefore rulemaking for each durability program is not required.

Commenters have been provided an opportunity for meaningful comment in compliance with section 307(d) of the Clean Air Act. EPA believes the provisions of section 307(d) have been satisfied in this rulemaking and the public has been provided an opportunity to comment on the adjudicatory process and durability program requirements. EPA proposed the criteria for establishment of the specific durability program

<sup>7</sup>In addition, this is not inconsistent with the definition of "new motor vehicle" in section 216. That definition looks at when title is received by the ultimate purchaser, and does not place any restriction related to whole vehicle aged or bench aged parts. A test vehicle would meet the definition of a new vehicle whether it has bench aged or whole vehicle aged parts, as long as title has not transferred to the ultimate purchaser.

requirements that manufacturers must satisfy for EPA approval of their durability program. These criteria enable EPA to evaluate the expected in-use deterioration of these durability groups, the parameters of the durability demonstration, and the compliance determination. EPA described in the preamble the kinds of information generated and durability programs used under the current RDP-I regulations. In addition, EPA placed in the docket a draft technical support document outlining manufacturer data and other information about the current revised durability program (RDP-I). EPA Air Docket #A-96-50, item III-B-2. Topics included (1) a discussion of the correlation procedures used by the Agency to assure that accurate tests are run by manufacturers, (2) a discussion of the information collected from manufacturers which is not directly used in reaching the decision to grant a Certificate of Conformity, (3) a discussion of the effect of ambient weather patterns (warm versus cold climates) on in-use deterioration and recalls in support of the CAP2000 requirement that some vehicles tested be recruited from cold weather locales, and (4) a discussion of the rationale used in proposing a durability group concept for CAP2000 rather than the current engine family definition. The comment period was extended to provide the public with time to analyze the support document. EPA believes the information provided to the public has allowed opportunity for meaningful comments.

#### 5. Comment

A commenter claims that EPA's statement in the NPRM that "most manufacturers have demonstrated that essentially no engine out deterioration is experienced in their current product" is one of the "basic premises underlying its proposal" for manufacturer-specific durability programs. EPA Air Docket #A-96-50 item IV-D-10 at 11, citing 63 FR 39658

#### EPA Response

The NPRM language has not been characterized in its proper context. EPA's assertion in the NPRM is that new "durability groups" for exhaust emissions combine vehicles which are likely to exhibit similar exhaust emission deterioration over their useful lives. In the past "engine families" were grouped by engine-based parameters because most emission reductions were expected to occur through modifications to the engine operating characteristics. As described in the NPRM, today's vehicles accomplish most emission

control through catalytic conversion. In essence, engine-out deterioration is not experienced. Therefore, the past groupings (engine-based parameters that affect engine-out emissions) are less useful for evaluating the emissions durability of today's vehicle technology. EPA is requiring manufacturers to group vehicles based on catalyst parameters for more effective groupings.

Broadening the grouping criteria for durability demonstrations, by itself, may add some variability in emissions as compared to the current engine family definition; however, the Agency believes that the proposed broader durability groups coupled with worst case durability vehicle selections and in-use verification program would comprise a more accurate and effective emission control program than the current procedures and result in significant environmental benefits.

The accuracy of EPA's statement is discussed in the next response to comment.

#### 6. Comment

The commenter expressed several concerns about engine-out deterioration from the data presented in the Technical Support Document (TSD). In particular they noted: (1) Using General Motors' data, 4 of 9 vehicles display deterioration in engine-out emission with respect to at least one of the emission constituents. (2) Using Chrysler's data, 28 of 34 vehicles display deterioration in engine-out emission with respect to at least one of the emission constituents. The commenter expressed further concern that most of the Chrysler data is on Tier 0 vehicles. (3) Based on Table 1 of the TSD, the commenter interprets that Toyota has presented data to the Agency that their engines show significant engine-out deterioration. Based on this data the commenter takes issue with the Agency's statements in the NPRM that "most manufacturers have demonstrated that essentially no engine out deterioration is experienced on their current product".

The commenter also expressed concerns about bench aging versus whole vehicle aging. In particular they noted: For Honda, Ford and Toyota (which they indicate have approved track and bench procedures) 8 of 8 vehicle programs have no failing data; however for GM (which used exclusively a bench aging cycle) 2 of 8 vehicle programs experienced one or more test failures. Based on this data, the commenter concludes that this data "suggests that bench aging may not be as predictive as testing techniques

which rely, at least in part, on whole vehicle testing".

The commenter was concerned that all failing test data reported (6 of 131 tests) occurred for GM vehicles which used a bench procedure. The commenter noted that the data from Ford, Honda, and Toyota showed no emission failures. The commenter interpreted that Ford, Honda, and Toyota all used track procedures (in whole or part) and therefore track procedures were better than bench procedures.

Essentially the same comment as outlined above is provided by another commenter who references the concerns of Ethyl made in their comments to the NPRM.

#### EPA Response

The Agency presented the results of the in-use verification data collected under RDP-I in the TSD. The data showed that the certification standards were met for 125 of 131 tests run. The data from bench aging programs does not support the view that whole vehicle aging is better at representing in-use deterioration than bench aging of components. First, contrary to commenters statement, the Ford data was a bench procedure, not a track procedure.

The commenter focuses on the fact that several of the engine-out data points showed measurable deterioration, i.e., that not all of the data shows no engine-out deterioration. This variety in the data, however, is a normal expectation. When experimental data is collected, it is natural that the observed value will differ from the true value for the population due to test-to-test, lab-to-lab, and vehicle-to-vehicle variability. If the true population mean were zero (for example: the hypothesis that engine-out deterioration is zero), then due to this variability one would expect half the measurements to be positive (actual measured data indicates some positive deterioration), while the other half would be negative. The data present by Chrysler and GM show a better than expected distribution of measurements which support the hypothesis that the true mean of engine-out emissions deterioration is zero.

The commenter indicated that Toyota provided data indicating that their engines showed significant engine out emission deterioration based on their reading of Table 1 of the TSD. This observation is incorrect. In fact, the table reports that Toyota *did not supply* data indicating that their engines experienced essentially no engine-out deterioration. The table entry does not mean that Toyota supplied data

indicating that their engines experienced significant engine-out emission deterioration. In its discussions with the Agency, Toyota presented the opinion that Toyota engines did not have significant engine-out deterioration. The table indicates only that there was no submission of supporting data.

The commenter was concerned that most of the Chrysler data is on Tier 0 vehicles and was concerned that Tier 1 vehicles may perform differently. The data presented by Chrysler on Tier 1 vehicles showed that engine-out emissions increased over 100,000 miles by -2.6% for HC, 0.8% for CO, and -8.6% for NO<sub>x</sub>. Although a smaller data set, Chrysler's Tier 1 data also show essentially no engine-out deterioration and for CO a much smaller rate of deterioration (0.8% versus 4.7%) with Tier 1 technology.

EPA disagrees with commenters claim that "significant deterioration in engine-out emissions can (and, in fact, does) occur over time." See comment at 12. The Chrysler data shows that the average engine-out emission deterioration was -4.3% for HC, 4.7% for CO, and -11.9% for NO<sub>x</sub>; 62 of 102 deterioration measurements were zero or negative. The GM engine-out data was provided on nine vehicles; 24 of 27 emission deterioration measurements showed little or no emissions increase.

Second, the data for Honda and Toyota was largely at the low mileage point; only one class was run at the second mileage point and none at the high mileage point. Because emission levels typically increase with mileage it is not unexpected that there were more failures detected on the GM program which included high mileage tests. In any case the degree of in-use failures is extremely small (4.5%) and does not rise to a level that raises concerns about the representativeness of any type of durability cycle. In fact the low levels of failures from GM and other in-use data substantiates the validity of the RDP-I programs to accurately represent in-use emission deterioration for a vast majority of the vehicles.

Under both the proposed and finalized rule manufacturers are required to make a demonstration that their durability process will "effectively predict emission compliance for candidate in-use vehicles."<sup>8</sup> The main concern of the Agency is that a manufacturer's durability program will, as a whole, effectively predict in-use emission levels for the significant majority of vehicles. It is important that the durability procedure predict

deterioration of the entire vehicle emission control system, not any one individual element of design. To achieve this, the manufacturer may design a durability program which ages catalysts and oxygen sensors sufficiently to account for deterioration from all sources (including any expected deterioration from engine-out emissions). Consequently, a properly designed bench aging program could still be used to predict in-use emissions even when there would be a significant amount of engine-out deterioration.

The Agency is adopting several significant safeguards to assure that the durability process will effectively predict in-use compliance.

First, the Agency will review and approve each durability process. The Agency is requiring, under 40 CFR 86.1823-01 "analysis and/or data demonstrating the adequacy of the manufacturer's durability processes to effectively predict emission compliance for candidate in-use vehicles." During this review the Agency will evaluate the likelihood that the durability process will reflect in-use deterioration of a significant majority of candidate in-use vehicles which cover the breadth of the manufacturer's product line to be covered by the durability process.

Second, and most important, the Agency has required manufacturers to collect in-use verification data for each test group. There are several in-use test groups within a durability group: the Agency predicts there will be 2 to 4 test groups per durability group. The in-use data will identify potential problems which will allow more focused Agency recall investigations. It will also allow manufacturers to improve the predictive capability of their durability process.

Lastly, when the in-use verification data exceeds a threshold, the manufacturer must re-evaluate and/or improve their durability process. The Agency also may question the representativeness of a durability process which does not exceed these threshold values. Individual test group data may be pooled into a single durability group analysis to increase the statistical confidence of the conclusions of the analysis. It is expected that manufacturers will use the results of the in-use verification data to continually improve the predictive capability of their durability process.

### III. Projected Impacts

#### A. Environmental Impacts

EPA anticipates that the new requirements should result in some unquantifiable environmental benefits because of improvements to durability

demonstration requirements, and because of the potential to identify and improve upon vehicle emission performance based on the in-use verification test results.

#### B. Economic Impacts

The Agency estimates that manufacturers should realize a total annual savings of about \$55 million as a direct result of today's proposal. These figures include savings gained from streamlined certification activities, such as fewer durability and emission data demonstrations and reduced reporting burden, and accounts for the new costs incurred by the proposed in-use verification testing requirements. A detailed discussion and table of costs/savings are contained in the Support Document to this proposed regulation and are filed in the Docket.

### IV. Public Participation

The Agency held a Public Hearing for the proposed rule on August 10, 1998, where 4 people presented oral testimony. The public comment period for the proposed rule expired on September 8, but was extended through September 24 to provide additional time to submit written comments. A total of 21 comments were received. EPA's analysis and responses to those comments are contained in a separate Response to Comments document located in the Docket.

### V. Administrative Requirements

#### A. Executive Order 12866

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the Agency must determine whether the regulatory action is "significant" and therefore subject to OMB review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or,

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

<sup>8</sup>Text from 40 CFR 86.1823-01(b)(1).

It has been determined that this rule is not a "significant regulatory action" under the terms of the Executive Order 12866 and is therefore not subject to OMB review.

#### *B. Regulatory Flexibility Act*

The Regulatory Flexibility Act, 5 U.S.C. 601-612 generally requires an agency to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions. This final rule will not have a significant impact on a substantial number of small entities because it relates to requirements applicable only to manufacturers of motor vehicles, a group which does not contain a substantial number of small entities. See 1996 World Motor Vehicle Data, AAMA, pp. 282-285.

#### *C. Paperwork Reduction Act*

The Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*, requires agencies to submit for OMB review and approval, federal requirements and activities that result in the collection of information from ten or more persons. Information collection requirements may include reporting, labeling, and recordkeeping requirements. Federal agencies may not impose penalties on persons who fail to comply with collections of information that do not display a currently valid OMB control number.

The Office of Management and Budget (OMB) has approved the information collection requirements contained in this final rule under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* and has assigned OMB control number 2060-0104. An Information Collection Request (ICR) document has been prepared by EPA (EPA ICR No. 1872.01 & 0783.38) and a copy may be obtained from Sandy Farmer by mail at OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., SW, Washington DC 20460, by email at farmer.sandy@epa.gov, or by calling (202) 260-2740. A copy may also be downloaded off the internet at <http://www.epa.gov/icr>.

The information collection burden associated with this rule (testing, record keeping and reporting requirements for both certification and fuel economy activities) is estimated to total 446,783 hours annually for the manufacturers of light-duty vehicles and light-duty trucks. The hours spent annually on

information collection activities by a given manufacturer depends upon manufacturer-specific variables, such as the number of test groups and durability groups, production changes, emissions defects, and so forth.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15. EPA is amending the table in 40 CFR Part 9 of currently approved ICR numbers issued by OMB for various regulations to list the information requirements contained in this rule.

#### *D. Unfunded Mandates Reform Act*

Section 202 of the Unfunded Mandates Reform Act of 1995 (signed into law on March 22, 1995) requires that EPA prepare a budgetary impact statement before promulgating a rule that includes a federal mandate that may result in expenditure by state, local and tribal governments, in aggregate, or by the private sector, of \$100 million or more in any one year. Section 203 of the Unfunded Mandates Reform Act requires EPA to establish a plan for obtaining input from and informing, educating and advising any small governments that may be significantly or uniquely affected by the rule.

Under section 205 of the Unfunded Mandates Act, EPA must identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a budgetary impact statement must be prepared. EPA must select from those alternatives the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule, unless EPA explains why this alternative is not selected or the

selection of this alternative is inconsistent with law.

Because this final rule is expected to result in the expenditure by state, local and tribal governments or private sector of less than \$100 million in any one year, EPA has not prepared a budgetary impact statement or specifically addressed selection of the least costly, most cost-effective or least burdensome alternative. Because small governments will not be significantly or uniquely affected by this rule, EPA is not required to develop a plan with regard to small governments.

#### *E. Congressional Review Act*

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This rule is not a "major rule" as defined by 5 U.S.C. 804(2).

#### *F. National Technology Transfer and Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Pub. L. 104-113, section 12 (d)(15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (such as materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This final rule does not involve consideration of any new technical standards. However, this final rule adopts without change certain technical standards which are voluntary consensus standards, including six Society of Automotive Engineers (SAE) procedures, one International Standards Organization (ISO) procedure, and one American Society for Testing and Materials (ASTM) procedure.

### G. Protection of Children

Executive Order 13045, entitled "Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997) applies to any rule that: (1) is determined to be "economically significant," as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This final rule is not subject to Executive Order 13045 because it is not economically significant as defined in E.O. 12866, and because the Agency does not have reason to believe environmental health or safety risks addressed by this action present a disproportionate risk to children because no new emission standards are being promulgated.

### H. Enhancing the Intergovernmental Partnership

Under Executive Order 12875, EPA may not issue a regulation that is not required by statute and that creates a mandate upon a State, local or tribal government, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by those governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 12875 requires EPA to provide to the Office of Management and Budget a description of the extent of EPA's prior consultation with representatives of affected State, local and tribal governments, the nature of their concerns, copies of any written communications from the governments, and a statement supporting the need to issue the regulation. In addition, Executive Order 12875 requires EPA to develop an effective process permitting elected officials and other representatives of State, local and tribal governments "to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates."

Today's rule does not create a mandate on State, local or tribal governments. The rule does not impose any enforceable duties on these entities. This rule will be implemented at the federal level and imposes compliance obligations only on private industry.

Accordingly, the requirements of section 1(a) of Executive Order 12875 do not apply to this rule.

### I. Consultation and Coordination With Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. This rule will be implemented at the federal level and imposes compliance obligations only on private industry. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

### VI. Statutory Authority

Sections 203, 206, 207, 208 and 217 of the Clean Air Act provide EPA with the authority to revise the current emissions compliance procedures as described in this proposal. EPA's authority to make the major revisions found in CAP 2000 is based largely on sections 206 and 208(a) of the Act. Section 206 provides EPA with the authority to test, or require to be tested in such manner as the Agency deems appropriate, any new motor vehicle to determine whether the vehicle conforms with applicable emissions standards. EPA accordingly has the broad authority to streamline the current certification process to improve the efficiency of the process. Section 208(a) further requires manufacturers to establish and maintain records, to conduct tests, and to submit information that EPA may reasonably

require to determine whether a manufacturer is in compliance with Title II of the Act and it implementing regulations, or to otherwise carry out the provisions of Title II. This includes information needed by EPA to make certification decisions, to determine whether vehicles built and sold are covered by the certificate, and to ensure that defeat devices are not used. Section 208(a) also provides EPA with the authority to require post-production testing of vehicles by manufacturers to provide a means of monitoring the emissions performance of vehicles driven under real-world conditions. Such testing serves as a check on the accuracy of the certification procedures and on the levels of in-use compliance with applicable emissions standards.

This rule does not require any manufacturer to change its certification practices prior to model year 2000. However, manufacturers have the option to implement the streamlined certification procedures adopted today as soon as the rule is effective. Such early use of these procedures could benefit a manufacturer, and would also provide the environmental benefits expected from this program. EPA therefore finds that there is good cause under 5 U.S.C. 553(d) to make this rule effective upon publication.

### List of Subjects

#### 40 CFR Part 9

Reporting and recordkeeping requirements.

#### 40 CFR Part 85

Environmental protection, Confidential business information, Imports, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Research, Warranties.

#### 40 CFR Parts 86 and 88

Environmental protection, Administrative practice and procedure, Confidential business information, Incorporation by reference, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements.

#### 40 CFR Part 600

Environmental protection, Administrative practice and procedure, Fuel economy, Labeling, Reporting and recordkeeping requirements.

Dated: March 15, 1999.

**Carol M. Browner,**  
Administrator.

For the reasons set forth in the preamble, title 40, chapter I of the Code of Federal Regulations is amended as follows:

**PART 9—[AMENDED]**

1. The authority citation for part 9 continues to read as follows:

**Authority:** 7 U.S.C. 135 *et seq.*, 136–136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601–2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 *et seq.*, 1311, 1313d, 1314, 1321, 1326, 1330, 1344, 1345 (d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–1, 300j–2, 300j–3, 300j–4, 300j–9, 1857 *et seq.*, 6901–6992k, 7401–7671q, 7542, 9601–9657, 11023, 11048.

2. In § 9.1, the table is amended under the indicated heading by adding new entries in numerical order to read as follows:

**§ 9.1 OMB approvals under the Paperwork Reduction Act.**

40 CFR citation	OMB control No.
Control of Air Pollution From New and In-Use Motor Vehicles and New and In-Use Motor Vehicle Engines: Certification and Test Procedures	
86.1843–01 .....	2060–0104
86.1844–01 .....	2060–0104
86.1847–01 .....	2060–0104

**PART 85—[AMENDED]**

3. The authority citation for part 85 continues to read as follows:

**Authority:** 42 U.S.C. 7521, 7522, 7524, 7525, 7541, 7542, 7543, 7547 and 7601(a).

4. Section 85.501 is revised to read as follows:

**§ 85.501 General applicability.**

(a) Sections 85.501 through 85.505 are applicable to aftermarket conversion systems for which an enforcement exemption is sought from the tampering prohibitions contained in section 203 of the Act.

(b) References in this subpart to engine families and emission control systems shall be deemed to apply to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of 40 CFR part 86, subpart S.

5. Section 85.1501 is amended by adding a new paragraph (c) to read as follows:

**§ 85.1501 Applicability.**

\* \* \* \* \*

(c) References in this subpart to engine families and emission control systems shall be deemed to apply to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of 40 CFR part 86, subpart S.

6. Section 85.1505 is amended by revising paragraphs (a)(3)(i)(B), (a)(3)(ii)(B) and (a)(3)(iii) to read as follows:

**§ 85.1505 Final admission of certified vehicles.**

- (a) \* \* \*
- (3) \* \* \*
- (i) \* \* \*

(B) Initiate a change in production (running change) under the provisions of 40 CFR 86.084–14(c)(13) or 86.1842–01, as applicable, that causes the vehicle to meet Federal emission requirements.

(ii) \* \* \*  
(B) Should the subject vehicle or engine fail the second FTP, then the certificate holder must initiate a change in production (a running change) under the provisions of 40 CFR 86.084–14(c)(13) or 86.1842–01, as applicable, that causes the vehicle to meet Federal emission requirements.

(iii) If the certificate holder chooses to initiate a change in production (a running change) under the provisions of 40 CFR 86.084–14(c)(13) or 86.1842–01 as applicable, that causes the vehicle to meet Federal requirements, changes involving adjustments of adjustable vehicle parameters (e.g., adjusting the RPM, timing, air/fuel ratio) must be changes in the specified (i.e., nominal) values to be deemed acceptable by EPA.

7. Section 85.1510 is amended by revising paragraph (a)(3) to read as follows:

**§ 85.1510 Maintenance instructions, warranties, emission labeling and fuel economy requirements.**

- (a) \* \* \*
- (3) Such instructions shall not contain requirements more restrictive than those set forth in 40 CFR part 86, subpart A or subpart S, as applicable (Maintenance Instructions), and shall be in sufficient detail and clarity that an automotive mechanic of average training and ability can maintain or repair the vehicle or engine.

8. Section 85.1512 is amended by revising paragraph (a)(1)(iii) to read as follows:

**§ 85.1512 Admission of catalyst and O<sub>2</sub> sensor-equipped vehicles.**

- (a) \* \* \*

- (1) \* \* \*

(iii) Is labeled in accordance with 40 CFR part 86, subpart A or subpart S, or, where applicable, § 85.1510(c); and

\* \* \* \* \*

9. Section 85.1701 is amended by adding a new paragraph (c) to read as follows:

**§ 85.1701 General applicability.**

\* \* \* \* \*

(c) References in this subpart to engine families and emission control systems shall be deemed to apply to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of 40 CFR part 86, subpart S.

10. Section 85.1902 is amended by revising paragraph (b) to read as follows:

**§ 85.1902 Definitions.**

\* \* \* \* \*

(b) The phrase emission-related defect shall mean a defect in design, materials, or workmanship in a device, system, or assembly described in the approved Application for Certification (required by 40 CFR 86.1843–01 and 86.1844–01, 40 CFR 86.098–22 and like provisions of subpart A of this part and 40 CFR part 86) which affects any parameter or specification enumerated in Appendix VIII of this part.

\* \* \* \* \*

11. Section 85.2101 is revised to read as follows:

**§ 85.2101 General applicability.**

(a) Sections 85.2101 through 85.2111 are applicable to all 1981 and later model year light-duty vehicles and light-duty trucks.

(b) References in this subpart to engine families and emission control systems shall be deemed to apply to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of 40 CFR part 86, subpart S.

12. Section 85.2102 is amended by revising paragraph (a)(13)(ii) to read as follows:

**§ 85.2102 Definitions.**

- (a) \* \* \*
- (13) \* \* \*

(ii) In compliance with the requirements of 40 CFR 86.094–38 or 86.1808–01 (as appropriate for the applicable model year vehicle/engine classification); and

\* \* \* \* \*

13. Section 85.2208 is amended by revising paragraph (a)(1) to read as follows:



**§ 85.2208 Alternative standards and procedures.**

(a)(1) As a part of the certification process, as set forth in 40 CFR part 86, subparts A and S, a manufacturer may request an alternative short test standard or short test procedure for any vehicle or engine for which the standards or procedures specified in this subpart are not appropriate. The requestor shall supply relevant test data and technical support to substantiate the claim and shall also recommend alternative test procedures and/or standards for the Administrator's consideration. Upon an acceptable showing that the general standards or procedures are not appropriate, the Administrator shall set alternative standards or procedures through rulemaking. The administrative provisions of the certification process (see 40 CFR part 86, subparts A and S), apply to such a request for alternative standards or procedures.

**PART 86—[AMENDED]**

14. The authority citation for part 86 continues to read as follows:

**Authority:** 42 U.S.C. 7401-7671q.

15. Section 86.1 is amended by revising the entry for ASTM E29-93a in the table in paragraph (b)(1); the entries for SAE J1850, SAE J1877, SAE J1892, SAE J1962, SAE J1979, and SAE J2012 in the table in paragraph (b)(2); the entry for ANSI/AGA NGVI-1994 in the table in paragraph (b)(3); and the entry for ISO 9141-2 in the table in paragraph (b)(5) to read as follows:

**§ 86.1 Reference materials.**

(b) \* \* \*  
(1) \* \* \*

Document No. and name	40 CFR part 86 reference
ASTM E29-93a, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications.	86.098-15, 86.004-15, 86.1803-01, 86.1823-01, 86.1824-01, 86.1825-01, 86.1837-01

(2) \* \* \*

Document No. and name	40 CFR part 86 reference
SAE J1850 July 1995, Class B Data Communication Network Interface.	86.099-17, 86.1806-01

Document No. and name	40 CFR part 86 reference
SAE J1877, July 1994 Recommended Practice for Bar-Coded Vehicle Identification Number Label.	86.095-35, 86.1806-01
SAE J1892 October 1993, Recommended Practice for Bar-Coded Vehicle Emission Configuration Label.	86.095-35, 86.1806-01
SAE J1962 January 1995, Diagnostic Connector.	86.099-17, 86.1806-01
SAE J1979 July 1996, E/E Diagnostic Test Modes.	86.099-17, 86.1806-01
SAE J2012 July 1996, Recommended Practice for Diagnostic Trouble Code Definitions.	86.099-17, 86.1806-01

\* \* \* \* \*  
(3) \* \* \*

Document No. and name	40 CFR part 86 reference
ANSI/AGA NGV1-1994, Standard for Compressed Natural Gas Vehicle (NGV) Fueling Connection Devices.	86.001-9, 86.004-9, 86.098-8, 86.099-8, 86.099-9, 86.1810-01

\* \* \* \* \*  
(5) \* \* \*

Document No. and name	40 CFR part 86 reference
ISO 9141-2 February 1994, Road vehicles—Diagnostic systems Part 2.	86.099-17, 86.1806-01

**Subpart A—[Amended]**

16. A new § 86.001-1 is added to subpart A to read as follows:

**§ 86.001-1 General applicability.**

(a) The provisions of this subpart generally apply to 2001 and later model year new Otto-cycle and diesel-cycle heavy-duty engines. In cases where a provision applies only to a certain vehicle group based on its model year, vehicle class, motor fuel, engine type, or other distinguishing characteristics, the limited applicability is cited in the appropriate section or paragraph. The provisions of this subpart continue to generally apply to 2000 and earlier model year new Otto-cycle and diesel-cycle light-duty vehicles and 2000 and earlier model year new Otto-cycle and diesel-cycle light-duty trucks produced. Provisions generally applicable to all 2001 and later model year new Otto-cycle and diesel-cycle light-duty vehicles and 2001 and later model year new Otto-cycle and diesel-cycle light-

duty trucks are located in Subpart S of this part.

(b) Optional applicability. A manufacturer may request to certify any heavy-duty vehicle of 14,000 pounds Gross Vehicle Weight Rating or less in accordance with the light-duty truck provisions located in Subpart S of this Part. Heavy-duty engine or vehicle provisions do not apply to such a vehicle.

(c) [Reserved]

(d) [Reserved]

(e) Small volume manufacturers.

Special certification procedures are available for any manufacturer whose projected combined U.S. sales of light-duty vehicles, light-duty trucks, heavy-duty vehicles, and heavy-duty engines in its product line (including all vehicles and engines imported under the provisions of §§ 85.1505 and 85.1509 of this chapter) are fewer than 10,000 units for the model year in which the manufacturer seeks certification. To certify its product line under these optional procedures, the small-volume manufacturer must first obtain the Administrator's approval. The manufacturer must meet the eligibility criteria specified in § 86.092-14(b) before the Administrator's approval will be granted. The small-volume manufacturer's certification procedures are described in § 86.092-14.

(f) Optional procedures for determining exhaust opacity. (1) The provisions of subpart I of this part apply to tests which are performed by the Administrator, and optionally, by the manufacturer.

(2) Measurement procedures, other than those described in subpart I of this part, may be used by the manufacturer provided the manufacturer satisfies the requirements of § 86.091-23(f).

(3) When a manufacturer chooses to use an alternative measurement procedure it has the responsibility to determine whether the results obtained by the procedure will correlate with the results which would be obtained from the measurement procedure in subpart I of this part. Consequently, the Administrator will not routinely approve or disapprove any alternative opacity measurement procedure or any associated correlation data which the manufacturer elects to use to satisfy the data requirements for subpart I of this part.

(4) If a confirmatory test(s) is performed and the results indicate there is a systematic problem suggesting that the data generated under an optional alternative measurement procedure do not adequately correlate with data obtained in accordance with the



procedures described in subpart I of this part, EPA may require that all certificates of conformity not already issued be based on data obtained from procedures described in subpart I of this part.

**Subpart B—[Amended]**

17. Section 86.101 of subpart B is amended by adding a new paragraph (d) to read as follows:

**§ 86.101 General applicability.**

\* \* \* \* \*

(d) References in this subpart to engine families and emission control systems shall be deemed to refer to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of subpart S of this part.

18. Section 86.106–96 is amended by revising paragraph (a)(1) to read as follows:

**§ 86.106–96 Equipment required; overview.**

(a) \* \* \*

(1) *Evaporative emission tests, gasoline-fueled vehicles.* The evaporative emission test is closely related to and connected with the exhaust emission test. All vehicles tested for evaporative emissions must undergo testing according to the test sequences described in § 86.130–96; however, the Administrator may omit measurement of exhaust emissions to test for evaporative emissions. The Administrator may truncate a test after any valid emission measurement without affecting the validity of the test. Further, unless the evaporative emission test is waived by the Administrator under § 86.090–26 or § 86.1810, as applicable, all vehicles must undergo both tests. (Petroleum-fueled diesel vehicles are excluded from the evaporative emission standard.) Section 86.107 specifies the necessary equipment.

\* \* \* \* \*

19. Section 86.113–94 is amended by revising paragraphs (a)(3), (b)(5), (c)(3), (d)(1), (d)(3), (e)(4), and (f)(3) to read as follows:

**§ 86.113–94 Fuel specifications.**

(a) \* \* \*

(3) The specification range of the gasoline to be used under this paragraph (a) shall be reported in accordance with § 86.094–21(b)(3) or § 86.1844–01 as applicable.

(b) \* \* \*

(5) The specification range of the fuels to be used under paragraphs (b)(2), (b)(3) and (b)(4) of this section shall be

reported in accordance with § 86.094–21(b)(3) or § 86.1844–01 as applicable.

(c) \* \* \*

(3) The specification range of the fuels to be used under paragraphs (c)(1) and (c)(2) of this section shall be reported in accordance with § 86.094–21(b)(3) or § 86.1844–01 as applicable.

(d) \* \* \*

(1) Mixtures of petroleum and methanol fuels used for exhaust and evaporative emission testing and service accumulation for flexible fuel vehicles shall consist of the appropriate petroleum fuels listed in either paragraph (a) or paragraph (b) of this section and a methanol fuel representative of the fuel expected to be found in use, as specified in paragraph (c) of this section, and shall be within the range of fuel mixtures for which the vehicle was designed, as reported in § 86.94–21(j) or § 86.1844–01 as applicable. The Administrator may use any fuel or fuel mixture within this range for testing.

\* \* \* \* \*

(3) The specification range of the fuels to be used under this paragraph shall be reported in accordance with § 86.094–21(b)(3) or § 86.1844–01 as applicable.

(e) \* \* \*

(4) The specification range of the fuels to be used under paragraphs (e)(1), (e)(2) and (e)(3) of this section shall be reported in accordance with § 86.094–21(b)(3) or § 86.1844–01 as applicable.

(f) \* \* \*

(3) The specification range of the fuel to be used under paragraphs (f)(1) and (f)(2) of this section shall be measured in accordance with ASTM D2163–61 (Incorporated by reference; see § 86.1) and reported in accordance with § 86.094–21(b)(3) or § 86.1844–01 as applicable.

\* \* \* \* \*

20. Section 86.127–00 is amended by revising the introductory text and paragraph (h) to read as follow:

**§ 86.127–00 Test procedures; overview.**

*Applicability.* The procedures described in this and subsequent sections are used to determine the conformity of vehicles with the standards set forth in subpart A or S of this part (as applicable) for light-duty vehicles and light-duty trucks. Except where noted, the procedures of paragraphs (a) through (b) of this section, § 86.127–96 (c) and (d), and the contents of §§ 86.135–94, 86.136–90, 86.137–96, 86.140–94, 86.142–90, and 86.144–94 are applicable for determining emission results for vehicle exhaust emission systems designed to comply with the FTP emission

standards, or the FTP emission element required for determining compliance with composite SFTP standards.

Paragraphs (f) and (g) of this section discuss the additional test elements of aggressive driving (US06) and air conditioning (SC03) that comprise the exhaust emission components of the SFTP. Section 86.127–96(e) discusses fuel spitback emissions and paragraphs (h) and (i) of this section are applicable to all vehicle emission test procedures. Section 86.127–00 includes text that specifies requirements that differ from § 86.127–96. Where a paragraph in § 86.127–96 is identical and applicable to § 86.127–00, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.127–96.”

\* \* \* \* \*

(h) Except in cases of component malfunction or failure, all emission control systems installed on or incorporated in a new motor vehicle shall be functioning during all procedures in this subpart. Maintenance to correct component malfunction or failure shall be authorized in accordance with § 86.098–25 or § 86.1834–01 as applicable.

\* \* \* \* \*

21. Section 86.128–79 is amended by revising paragraph (g)(2) to read as follows:

**§ 86.128–79 Transmissions.**

\* \* \* \* \*

(g) \* \* \*

(2) A manufacturer may recommend to the ultimate purchaser shift procedures other than those used in testing by the EPA, Provided that: All shift procedures (including multiple shift speeds) which the manufacturer proposes to supply to the ultimate purchaser are provided to the Administrator as part of the manufacturer’s application for certification, or as an amendment to such application, under § 86.079–32, § 86.079–33, § 86.082–34, or § 86.1844–01 as applicable.

\* \* \* \* \*

22. Section 86.129–00 is amended by revising footnote 4 to the table in paragraph (a) and paragraph (d)(1)(iv) to read as follows:

**§ 86.129–00 Road load power, test weight, inertia weight class determination, and fuel temperature profile.**

\* \* \* \* \*

(a) \* \* \*

\* \* \* \* \*

<sup>4</sup> For model year 1994 and later heavy light-duty trucks not subject to the Tier 0 standards of § 86.094–9, test weight basis shall be adjusted loaded vehicle weight, as

defined in § 86.094-2 or 86.1803-01 as applicable. For all other vehicles, test weight basis shall be loaded vehicle weight, as defined in § 86.082-2 or 86.1803-01 as applicable.

\* \* \* \* \*

- (d) \* \* \*
- (1) \* \* \*

(iv) Small-volume manufacturers, as defined in § 86.094-14(b)(1) or § 86.1838-01 as applicable, may use an alternate method for generating fuel temperature profiles, subject to the approval of the Administrator.

\* \* \* \* \*

23. Section 86.132-96 is amended by revising paragraph (e)(2)(ii) to read as follows:

**§ 86.132-96 Vehicle preconditioning.**

\* \* \* \* \*

- (e) \* \* \*
- (2) \* \* \*

(ii) For abnormally treated vehicles, as defined in § 86.085-2 or § 86.1803-01 as applicable, two Highway Fuel Economy Driving Schedules, found in 40 CFR part 600, appendix I, run in immediate succession, with the road load power set at twice the value obtained from § 86.129-80.

\* \* \* \* \*

**Subpart G—[Amended]**

24-25. Section 86.601-84 of subpart G is amended by adding paragraph (b) to read as follows:

**§ 86.601-84 Applicability.**

\* \* \* \* \*

(b) References in this subpart to engine families and emission control systems shall be deemed to refer to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of Subpart S of this part.

**Subpart H—[Amended]**

26. Section 86.701-94 is revised to read as follows:

**§ 86.701-94 General applicability.**

(a) The provisions of this subpart apply to: 1994 and later model year Otto-cycle and diesel light-duty vehicles; 1994 and later model year Otto-cycle and diesel light-duty trucks; and 1994 and later model year Otto-cycle and diesel heavy-duty engines. The provisions of subpart B of this part apply to this subpart.

(b) References in this subpart to engine families and emission control systems shall be deemed to refer to durability groups and test groups as applicable for manufacturers certifying

new light-duty vehicles and light-duty trucks under the provisions of subpart S of this part.

**Subpart J—[Amended]**

27. A new § 86.902-01 is added to subpart J to read as follows:

**§ 86.902-01 Definitions.**

- (a) The definitions in § 86.902-93 continue to apply to this subpart.
- (b) The definitions in subparts A and S of this part apply to this subpart.

28. A new § 86.907-01 is added to subpart J to read as follows:

**§ 86.907-01 Fee amounts.**

The fee for each certification request type is:

Certificate type	Model year 2001 and later
LDV/LDT:	
Fed Signed .....	\$27,211
Cal-only Signed .....	8,956
Fed Unsigned .....	2,738
Cal-only Unsigned .....	2,738
HDE/HDV:	
Fed Signed .....	12,584
Cal-only Signed .....	2,145
Fed Unsigned .....	2,145
Cal-only Unsigned .....	2,145
All Evaporative-only .....	2,145
Motorcycles:	
Fed Signed .....	840
Cal-only Signed .....	840
Fed Unsigned .....	840
Cal-only Unsigned .....	840

29. A new § 86.908-01 is added to subpart J to read as follows:

**§ 86.908-01 Waivers and refunds.**

This section includes text that specifies requirements that differ from § 86.908-93. Where a paragraph in § 86.908-93-01 is identical and applicable to this section, this may be indicated by specifying the corresponding paragraph and the statement “[Reserved]. For guidance see § 86.908-93.”

(a) [Reserved]. For guidance see § 86.908-93.

(b) *Request for refund.* The Administrator may refund a specified part of any fee imposed by § 86.907 if the applicant fails to obtain a signed certificate and requests a refund.

(1) That portion of the total fee to be refunded will be as follows:

[In percent]

	Federal	California-only
LDV/LDT .....	89.9	69.4
HDE/HDV .....	83.0	0
HD—Evaporative only .....	0	0

[In percent]

	Federal	California-only
MC .....	0	0

(2) For a refund of a portion of a waiver payment due to a decrease in the projected retail sales price of the vehicles or engines to be covered by the certification request the applicant should submit documentation to EPA detailing the waiver fee adjustment.

(c) *Waiver and refund address.* A request for a waiver or refund of part of a fee shall be submitted in writing by the applicant to the Environmental Protection Agency, Vehicle Programs and Compliance Division, 2565 Plymouth Road, Ann Arbor, MI 48105.

**Subpart K—[Amended]**

30. Section 86.1001-84 is amended by adding paragraph (b) to read as follows:

**§ 86.1001-84 Applicability.**

\* \* \* \* \*

(b) References in this subpart to engine families and emission control systems shall be deemed to refer to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of subpart S of this part.

**Subpart L—[Amended]**

31. Section 86.1101-87 is revised to read as follows:

**§ 86.1101-87 Applicability.**

(a) The provisions of this subpart are applicable for 1987 and later model year gasoline-fueled and diesel heavy-duty engines and heavy-duty vehicles. These vehicles include light-duty trucks rated in excess of 6,000 pounds gross vehicle weight.

(b) References in this subpart to engine families and emission control systems shall be deemed to refer to durability groups and test groups as applicable for manufacturers certifying new light-duty trucks under the provisions of subpart S of this part.

**Subpart O—[Amended]**

32. Section 86.1401 is revised to read as follows:

**§ 86.1401 Scope; applicability.**

(a) This subpart contains CST procedures for gasoline-fueled Otto-cycle light-duty vehicles, and for gasoline-fueled Otto-cycle light-duty trucks, including those certified to operate using both gasoline and another fuel (for example, “flexible-fuel” or

“dual-fuel” light-duty vehicles and light-duty trucks). For the purposes of the Certification Short Test, flexible-fuel or dual-fuel vehicles will be treated as dedicated gasoline vehicles. This subpart applies to 1996 and later model years.

(b) References in this subpart to engine families and emission control systems shall be deemed to refer to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of subpart S of this part.

#### Subpart P—[Amended]

33. Section 86.1501 is revised to read as follows:

##### § 86.1501–94 Scope; applicability.

(a) This subpart contains gaseous emission idle test procedures for light-duty trucks and heavy-duty engines for which idle CO standards apply. It applies to 1994 and later model years. The idle test procedures are optionally applicable to 1994 through 1996 model year natural gas-fueled and liquified petroleum gas-fueled light-duty trucks and heavy-duty engines.

(b) References in this subpart to engine families and emission control systems shall be deemed to refer to durability groups and test groups as applicable for manufacturers certifying new light-duty trucks under the provisions of subpart S of this part.

34. Section 86.1502–84 is revised to read as follows:

##### § 86.1502–84 Definitions.

The definitions in § 86.084–2 or § 86.1803–01, as applicable, apply to this subpart.

35. Section 86.1503–84 is revised to read as follows:

##### § 86.1503–84 Abbreviations.

The abbreviations in § 86.084–3 or in § 86.1804–01, as applicable, apply to this subpart.

#### Subpart Q—[Amended]

36. Section 86.1601 is amended by adding a new paragraph (d) to read as follows:

##### § 86.1601 General applicability.

\* \* \* \* \*

(d) References in this subpart to engine families and emission control systems shall be deemed to refer to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of subpart S of this part.

#### Subpart R—[Amended]

37. Section 86.1701–99 is amended by adding a new paragraph (e) to read as follows:

##### § 86.1701–99 General applicability.

\* \* \* \* \*

(e) References in this subpart to engine families and emission control systems shall be deemed to refer to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of subpart S of this part.

38.–39. New §§ 86.1713–01, 86.1714–01, 86.1715–01, and 86.1716–01 are added and reserved to read as follow:

##### § 86.1713–01 [Reserved]

##### § 86.1714–01 [Reserved]

##### § 86.1715–01 [Reserved]

##### § 86.1716–01 [Reserved]

40. A new § 86.1717–01 is added to subpart R to read as follows:

##### § 86.1717–01 Emission control diagnostic system for 1999 and later light-duty vehicles and light-duty trucks.

(a) The provisions of § 86.1806–01 and subsequent model year provisions do not apply to this subpart.

(b) The requirements in Chapter 6 of the California Regulatory Requirements Applicable to the National Low Emission Vehicle Program (October, 1996) (these requirements are incorporated by reference; see § 86.1) apply to this subpart.

(c) No vehicle shall be certified under the provisions of this subpart unless such vehicle complies with the requirements of section 202(m) (1), (2), (4), and (5) of the Clean Air Act (42 U.S.C. 7521(m) (1), (2), (4) and (5)).

41. A new § 86.1721–01 is added to subpart R to read as follows:

##### § 86.1721–01 Application for certification.

The provisions of § 86.1844–01 and subsequent model year provisions apply to this subpart, with the following additions to the part 1 and part 2 applications:

(a) For TLEVs, LEVs, and ULEVs not certified exclusively on gasoline, projected U.S. sales data and fuel economy data 19 months prior to January 1 of the calendar year with the same numerical designation as the model year for which the vehicles are certified, and projected U.S. sales data for all vehicles, regardless of operating fuel or vehicle emission category, sufficient to enable the Administrator to select a test fleet representative of the vehicles (or engines) for which

certification is requested at the time of certification.

(b) For ZEVs and hybrid electric vehicles, the certification part 1 application shall include the following:

(1) Identification and description of the vehicle(s) covered by the application.

(2) Identification of the vehicle weight category to which the vehicle is certifying: LDV, LDT 0–3750 lbs LVW, LDT 3751–5750 lbs LVW (state test weight range), and the curb weight and gross vehicle weight rating of the vehicle.

(3) Identification and description of the propulsion system for the vehicle.

(4) Identification and description of the climate control system used on the vehicle.

(5) Projected number of vehicles sold in the U.S., and projected U.S. sales.

(6) For electric and hybrid electric vehicles, identification of the energy usage in kilowatt-hours per mile from the point when electricity is introduced from the electrical outlet and the operating range in miles of the vehicle when tested in accordance with the All-Electric Range Test provisions in § 86.1770.

(7) If the vehicle is equipped with a fuel fired heater, a description of the control system logic of the fuel fired heater, including an evaluation of the conditions under which the fuel fired heater can be operated and an evaluation of the possible operational modes and conditions under which evaporative emissions can exist. Vehicles which utilize fuel fired heaters which can be operated at ambient temperatures above 40 deg. F or which cannot be demonstrated to have zero evaporative emissions under any and all possible operation modes and conditions shall not be certified as ZEVs.

(8) For ZEVs and HEVs which use fuel fired heaters, the manufacturer shall provide the exhaust emissions value per mile produced by the auxiliary fuel fired heater. This shall be accomplished by determining heater emissions in grams per minute when operating at a maximum heating capacity for a period of 20 minutes, and multiplying that number by 3.6 minutes per mile. At the time of certification, manufacturers shall submit their test plan which describes the procedure used to determine the mass emissions of the fuel fired heater.

(9) All information necessary for proper and safe operation of the vehicle, including information on the safe handling of the battery system, emergency procedures to follow in the event of battery leakage or other

malfunctions that may affect the safety of the vehicle operator or laboratory personnel, method for determining battery state-of-charge, battery charging capacity and recharging procedures, and any other relevant information as determined by the Administrator.

(c) For all vehicles subject to the provisions of § 86.1717, with its part 1 application for certification a description of the malfunction and diagnostic system to be installed on the vehicles. (The vehicles shall not be certified unless the Administrator finds that the malfunction and diagnostic system complies with the requirements of § 86.1717.)

(d) The comprehensive list of test results and the applicable certification levels required under § 86.1844-01(d)(7) shall include the following information:

(1) For all TLEVs, LEVs, and ULEVs certifying on a fuel other than conventional gasoline, manufacturers shall multiply the NMOG exhaust certification level for each emission-data vehicle by the appropriate reactivity adjustment factor listed in § 86.1777(d)(2)(i) or established by the Administrator pursuant to Appendix XVII of this part to demonstrate compliance with the applicable NMOG emission standard. For all TLEVs, LEVs, and ULEVs certifying on natural gas, manufacturers shall multiply the NMOG exhaust certification level for each emission-data vehicle by the appropriate reactivity adjustment factor listed in § 86.1777(d)(2)(i) or established by the Administrator pursuant to Appendix XVII of this part and add that value to the product of the methane exhaust certification level for each emission-data vehicle and the appropriate methane reactivity adjustment factor listed in § 86.1777(d)(2)(ii) or established by the Administrator pursuant to Appendix XVII of this part to demonstrate compliance with the applicable NMOG emission standard. Manufacturers requesting to certify to existing standards utilizing an adjustment factor unique to its vehicle/fuel system must follow the data requirements described in Appendix XVII of this part. A separate formaldehyde exhaust certification level shall also be provided for demonstrating compliance with emission standards for formaldehyde.

(2) [Reserved]

(e) Manufacturers shall submit the standard phase-in compliance information required in § 86.1844-01(d)(13) and (e)(4) with respect to the applicable standards of the subpart.

(f) For each engine family certified to TLEV, LEV, or ULEV standards, manufacturers shall submit with the

certification application, an engineering evaluation demonstrating that a discontinuity in emissions of non-methane organic gases, carbon monoxide, oxides of nitrogen and formaldehyde measured on the Federal Test Procedure (subpart B of this part) does not occur in the temperature range of 20 to 86 deg F. For diesel vehicles, the engineering evaluation shall also include particulate emissions.

42. New §§ 86.1722-01 and 86.1723-01 are added and reserved to read as follows:

**§ 86.1722-01 [Reserved]**

**§ 86.1723-01 [Reserved]**

43. A new § 86.1724-01 is added to subpart R to read as follows:

**§ 86.1724-01 Emission data vehicle selection.**

(a) [Reserved]

(b) The provisions of § 86.1828-01 and subsequent model year provisions apply to this subpart with the following additions:

(1) For TLEVs, LEVs, ULEVs, and ZEVs certifying according to the provisions of this subpart, a manufacturer may substitute emission data vehicles selected by the California Air Resources Board criteria instead of using the criteria specified in §§ 86.1828-01(a) through (d) and subsequent model year provisions.

(2) For vehicles certified to the SFTP exhaust emission standards, if air conditioning is projected to be available on any vehicles within the engine family, the selection of engine codes will be limited selections which have air conditioning available and would require that any vehicle selected under this section has air conditioning installed and operational.

44. A new § 86.1725-01 is added to read as follows:

**§ 86.1725-01 Allowable maintenance.**

This section includes text that specifies requirements that differ from § 86.1725-99. Where a paragraph in § 86.1725-99 is identical and applicable to this section, this may be indicated by specifying the corresponding paragraph and the statement "[Reserved]." For guidance see § 86.1725-99. The provisions of § 86.1834-01 and subsequent model year provisions apply to this subpart, with the following additions:

(a) Hybrid electric vehicles that use Otto-cycle or diesel engines are subject to the applicable Otto-cycle or diesel engine maintenance requirements of § 86.1834-01(b) through (e) and subsequent model year provisions.

(b) through (c) [Reserved]. For guidance see § 86.1725-99.

(d) When air conditioning SFTP exhaust emission tests are required, the manufacturer must document that the vehicle's air conditioning system is operating properly and in a representative condition. Required air conditioning system maintenance is performed as unscheduled maintenance that does not require the Administrator's approval.

45. Section 86.1726-01 is added and reserved to read as follows:

**§ 86.1726-01 [Reserved]**

46. A new § 86.1728-01 is added to subpart R to read as follows:

**§ 86.1728-01 Compliance with emission standards for the purpose of certification.**

The provisions of § 86.1837-01 and subsequent model year provisions apply with respect to the applicable standards of this subpart.

47. A new § 86.1734-01 is added and reserved to read as follows:

**§ 86.1734-01 [Reserved]**

48. A new § 86.1735-01 is added to subpart R to read as follows:

**§ 86.1735-01 Labeling.**

The following requirements shall apply to TLEVs, LEVs, ULEVs, and ZEVs certified under the provisions of this subpart:

(a) The requirements in § 86.1807-01 and subsequent model year provisions do not apply to this section.

(b) The requirements in Chapter 7 of the California Regulatory Requirements Applicable to the National Low Emission Vehicle Program (October, 1996) shall apply. These requirements are incorporated by reference (see § 86.1).

49. Section 86.1772-99 is amended by revising paragraph (b)(1) to read as follows:

**§ 86.1772-99 Road load power, test weight, and inertia weight class determination.**

\* \* \* \* \*

(b) \* \* \*

(1) For electric and hybrid electric vehicle lines where it is expected that more than 33 percent of a vehicle line will be equipped with air conditioning, per § 86.096-24(g)(2) or § 86.1832-01(a) as applicable, that derives power from the battery pack, the road load shall be increased by the incremental horsepower required to operate the air conditioning unit. The incremental increase shall be determined by recording the difference in energy required for a hybrid electric vehicle under all-electric power to complete the

running loss test fuel tank temperature profile test sequence without air conditioning and the same vehicle tested over the running loss test fuel tank temperature profile test sequence with the air conditioning set to the "NORMAL" air conditioning mode and adjusted to the minimum discharge air temperature and high fan speed over the time period needed to perform the test sequence, and converting this value into units of horsepower. Vehicles equipped with automatic temperature controlled air conditioning systems shall be operated in "AUTOMATIC" temperature and fan modes with the system set at 72 deg. F. The running loss test fuel tank temperature profile test sequence is found in § 86.129(d).

\* \* \* \* \*  
50. Section 86.1776-99 is amended by revising paragraph (b)(1) to read as follows:

**§ 86.1776-99 Records required.**

\* \* \* \* \*

(b) \* \* \*

(1) The manufacturer shall record in the durability-data vehicle logbook, the number of regenerations that occur during the 50,000 mile durability test of each diesel light-duty vehicle and light-duty truck equipped with a periodically regenerating trap oxidizer system. The manufacturer shall include, for each regeneration: the date and time of the start of regeneration, the duration of the regeneration, and the accumulated mileage at the start and the end of regeneration. The number of regenerations will be used in the calculation of the deterioration factor or other durability demonstration under § 86.1823-01 and subsequent model year provisions.

\* \* \* \* \*

51. A new subpart S is added to part 86 to read as follows:

**Subpart S—General Compliance Provisions for Control of Air Pollution From New and In-Use Light-Duty Vehicles and Light-Duty Trucks**

Sec.

- 86.1801-01 Applicability.
- 86.1802-01 Section numbering; construction.
- 86.1803-01 Definitions.
- 86.1804-01 Acronyms and abbreviations.
- 86.1805-01 Useful life.
- 86.1806-01 On-board diagnostics.
- 86.1807-01 Vehicle labeling.
- 86.1808-01 Maintenance instructions.
- 86.1809-01 Prohibition of defeat devices.
- 86.1810-01 General standards; increase in emissions; unsafe conditions; waivers
- 86.1811-01 Emission standards for light-duty vehicles.
- 86.1812-01 Emission standards for light-duty trucks 1.

- 86.1813-01 Emission standards for light-duty trucks 2.
- 86.1814-01 Emission standards for light-duty trucks 3.
- 86.1814-02 Emission standards for light-duty trucks 3.
- 86.1814-04 Emission standards for light-duty trucks 3.
- 86.1815-01 Emission standards for light-duty trucks 4.
- 86.1815-02 Emission standards for light-duty trucks 4.
- 86.1815-04 Emission standards for light-duty trucks 4.
- 86.1816 through 86.1819 [Reserved].
- 86.1820-01 Durability group determination.
- 86.1821-01 Evaporative/refueling family determination.
- 86.1822-01 Durability data vehicle selection.
- 86.1823-01 Durability demonstration procedures for exhaust emissions.
- 86.1824-01 Durability demonstration procedures for evaporative emissions.
- 86.1825-01 Durability demonstration procedures for refueling emissions.
- 86.1826-01 Assigned deterioration factors for small volume manufacturers and small volume test groups.
- 86.1827-01 Test group determination.
- 86.1828-01 Emission data vehicle selection.
- 86.1829-01 Durability and emission testing requirements; waivers.
- 86.1830-01 Acceptance of vehicles for emission testing.
- 86.1831-01 Mileage accumulation requirements for test vehicles.
- 86.1832-01 Optional equipment and air conditioning for test vehicles.
- 86.1833-01 Adjustable parameters.
- 86.1834-01 Allowable maintenance.
- 86.1835-01 Confirmatory certification testing.
- 86.1836-01 Manufacturer-supplied production vehicles for testing.
- 86.1837-01 Rounding of emission measurements.
- 86.1838-01 Small volume manufacturers certification procedures.
- 86.1839-01 Carryover of certification data.
- 86.1840-01 Special test procedures.
- 86.1841-01 Compliance with emission standards for the purpose of certification.
- 86.1842-01 Addition of a vehicle after certification; and changes to a vehicle covered by certification.
- 86.1843-01 General information requirements.
- 86.1844-01 Information requirements: Application for certification and submittal of information upon request.
- 86.1845-01 Manufacturer in-use verification testing requirements.
- 86.1845-04 Manufacturer in-use verification testing requirements.
- 86.1846-01 Manufacturer in-use confirmatory testing requirements.
- 86.1847-01 Manufacturer in-use verification and in-use confirmatory testing; submittal of information and maintenance of records.
- 86.1848-01 Certification.
- 86.1849-01 Right of entry.
- 86.1850-01 Denial, suspension or revocation of certificate of conformity.

- 86.1851-01 Application of good engineering judgment to manufacturers' decisions.
- 86.1852-01 Waivers for good in-use emission performance.
- 86.1853-01 Certification hearings.
- Appendix I to Subpart S of Part 86—Vehicle Procurement Methodology
- Appendix II to Subpart S of Part 86—As-received Testing Vehicle Rejection Criteria
- Appendix III to Subpart S of Part 86—As-received Inspection

**Subpart S—General Compliance Provisions for Control of Air Pollution From New and In-Use Light-Duty Vehicles and Light-Duty Trucks**

**§ 86.1801-01 Applicability.**

(a) The provisions of this subpart apply to 2001 and later model year new Otto-cycle and diesel-cycle light-duty vehicles and 2001 and later model year new Otto-cycle and diesel-cycle light-duty trucks. These provisions also apply to 2001 model year and later new incomplete light-duty trucks. In cases where a provision applies only to a certain vehicle group based on its model year, vehicle class, motor fuel, engine type, or other distinguishing characteristics, the limited applicability is cited in the appropriate section or paragraph of this subpart.

(b) The provisions of this subpart apply to aftermarket conversions of all model year Otto-cycle and diesel-cycle light-duty vehicles and light-duty trucks as defined in 40 CFR 85.502.

(c) Optional applicability.

(1) A manufacturer may request to certify any heavy-duty vehicle of 14,000 pounds Gross Vehicle Weight Rating or less in accordance with the light-duty truck provisions. Heavy-duty engine or heavy-duty vehicle provisions of subpart A of this part do not apply to such a vehicle.

(2) A manufacturer may optionally use the provisions of this subpart in lieu of the provisions of subpart A of this part beginning with the 2000 model year. Manufacturers choosing this option must comply with all provisions of this subpart, except the standards in subpart A of this part apply for model year 2000. Manufacturers may elect this provision for either all or a portion of their product line.

(d) Small volume manufacturers. Special certification procedures are available for any manufacturer whose projected or actual combined U.S. sales of light-duty vehicles, light-duty trucks, heavy-duty vehicles, and heavy-duty engines in its product line (including all vehicles and engines imported under the provisions of 40 CFR 85.1505 and 85.1509) are fewer than 15,000 units for

the model year in which the manufacturer seeks certification. The small volume manufacturer's light-duty vehicle and light-duty truck certification procedures are described in § 86.1838-01.

(e) National Low Emission Vehicle Program for light-duty vehicles and light-duty trucks. A manufacturer may elect to certify light-duty vehicles and light-duty trucks to the provisions of the National Low Emission Vehicle Program contained in subpart R of this part. Subpart R of this part is applicable only to those covered manufacturers as defined under the provisions of subpart R of this part. All provisions of this subpart S are applicable to vehicles certified pursuant to subpart R of this part, except as specifically noted in subpart R of this part.

**§ 86.1802-01 Section numbering; construction.**

(a) Section numbering. The model year of initial applicability is indicated by the section number. The two digits following the hyphen designate the first model year for which a section is applicable. The section continues to apply to subsequent model years unless a later model year section is adopted. Example: Section 86.18xx-01 applies to the 2001 and subsequent model years. If a § 86.18xx-03 is promulgated it would apply beginning with the 2003 model year; § 86.18xx-01 would apply to model years 2001 through 2002.

(b) A section reference without a model year suffix refers to the section applicable for the appropriate model year.

**§ 86.1803-01 Definitions.**

The following definitions apply to this subpart:

**505 Cycle** means the test cycle that consists of the first 505 seconds (seconds 1 to 505) of the EPA Urban Dynamometer Driving Schedule, described in § 86.115-00 and listed in Appendix I, paragraph (a), of this part.

**866 Cycle** means the test cycle that consists of the last 866 seconds (seconds 506 to 1372) of the EPA Urban Dynamometer Driving Schedule, described in § 86.115-00 and listed in Appendix I, paragraph (a), of this part.

**Abnormally treated vehicle** means any diesel light-duty vehicle or diesel light-duty truck that is operated for less than five miles in a 30 day period immediately prior to conducting a particulate emissions test.

**AC1** means a test procedure as described in § 86.162-00 which simulates testing with air conditioning operating in an environmental test cell by adding the air conditioning

compressor load to the normal dynamometer forces.

**AC2** means a test procedure as described in § 86.162-00 which simulates testing with air conditioning operating in an environmental test cell by adding a heat load to the passenger compartment.

**Accuracy** means the difference between a measurement and true value.

**Act** means Part A of Title II of the Clean Air Act as amended, 42 U.S.C., 7401, et seq.

**Adjusted Loaded Vehicle Weight** means the numerical average of vehicle curb weight and gross vehicle weight rating (GVWR).

**Administrator** means the Administrator of the Environmental Protection Agency or his/her authorized representative.

**Alternative fuels** means any fuel other than gasoline and diesel fuels, such as methanol, ethanol, and gaseous fuels.

**Approach angle** means the smallest angle in a plan side view of an automobile, formed by the level surface on which the automobile is standing and a line tangent to the front tire static loaded radius arc and touching the underside of the automobile forward of the front tire.

**As-received condition** means the condition of an in-use vehicle procured for emission testing required by this subpart upon which no adjustments, maintenance, or component replacement has occurred subsequent to the vehicle's last routine operation by the vehicle's owner, lessee, or operator prior to procurement.

**Auxiliary Emission Control Device (AECDD)** means any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system.

**Axle clearance** means the vertical distance from the level surface on which an automobile is standing to the lowest point on the axle differential of the automobile.

**Basic engine** means a unique combination of manufacturer, engine displacement, number of cylinders, fuel system (as distinguished by number of carburetor barrels or use of fuel injection), catalyst usage, and other engine and emission control system characteristics specified by the Administrator.

**Basic vehicle frontal area** means the area enclosed by the geometric projection of the basic vehicle along the longitudinal axis, which includes tires but excludes mirrors and air deflectors,

onto a plane perpendicular to the longitudinal axis of the vehicle.

**Bi-directional control** means the capability of a diagnostic tool to send messages on the data bus that temporarily overrides the module's control over a sensor or actuator and gives control to the diagnostic tool operator. Bi-directional controls do not create permanent changes to engine or component calibrations.

**Body style** means a level of commonality in vehicle construction as defined by number of doors and roof treatment (e.g., sedan, convertible, fastback, hatchback).

**Body type** means a name denoting a group of vehicles that are either in the same car line or in different car lines provided the only reason the vehicles qualify to be considered in different car lines is that they are produced by a separate division of a single manufacturer.

**Breakover angle** means the supplement of the largest angle, in the plan side view of an automobile, that can be formed by two lines tangent to the front and rear static loaded radii arcs and intersecting at a point on the underside of the automobile.

**Calibration** means the set of specifications, including tolerances, unique to a particular design, version, or application of a component or components assembly capable of functionally describing its operation over its working range.

**Calibration gas** means a gas of known concentration which is used to establish the response curve of an analyzer.

**Candidate in-use vehicle** means an in-use vehicle which would be eligible to participate in the in-use verification program in accordance with § 86.1845-01.

**Car line** means a name denoting a group of vehicles within a make or car division which has a degree of commonality in construction (e.g., body, chassis). Car line does not consider any level of decor or opulence and is not generally distinguished by characteristics as roofline, number of doors, seats, or windows except for station wagons or light-duty trucks. Station wagons and light-duty trucks are considered to be different car lines than passenger cars.

**Certification Short Test (CST)** means the test, for gasoline-fueled Otto-cycle light-duty vehicles and light-duty trucks, performed in accordance with the procedures contained in 40 CFR part 86, subpart O.

**Configuration** means a subclassification within a test group which is based on engine code, inertia weight class, transmission type and gear

ratios, final drive ratio, and other parameters which may be designated by the Administrator.

*Conveniently available service facility and spare parts for small-volume manufacturers* means that the vehicle manufacturer has a qualified service facility at or near the authorized point of sale or delivery of its vehicles and maintains an inventory of all emission-related spare parts or has made arrangements for the part manufacturers to supply the parts by expedited shipment (e.g., utilizing overnight express delivery service, UPS, etc.).

*Crankcase emissions* means airborne substances emitted to the atmosphere from any portion of the engine crankcase ventilation or lubrication systems.

*Critical emission-related components* are those components which are designed primarily for emission control, or whose failure may result in a significant increase in emissions accompanied by no significant impairment (or perhaps even an improvement) in performance, driveability, and/or fuel economy as determined by the Administrator.

*Critical emission-related maintenance* means that maintenance to be performed on critical emission-related components.

*Curb weight* means the actual or the manufacturer's estimated weight of the vehicle in operational status with all standard equipment, and weight of fuel at nominal tank capacity, and the weight of optional equipment computed in accordance with § 86.1832-01; incomplete light-duty trucks shall have the curb weight specified by the manufacturer.

*Curb-idle* means, for manual transmission code light-duty vehicles and trucks, the engine speed with the transmission in neutral or with the clutch disengaged and with the air conditioning system, if present, turned off. For automatic transmission code light-duty vehicles and light-duty trucks, curb-idle means the engine speed with the automatic transmission in the park position (or neutral position if there is no park position), and with the air conditioning system, if present, turned off.

*Data stream information* means information (i.e., messages and parameters) originated within the vehicle by a module or intelligent sensors (i.e., a sensor that contains and is controlled by its own module) and transmitted between a network of modules and/or intelligent sensors connected in parallel with either one or two communication wires. The information is broadcast over the

communication wires for use by other modules (e.g., chassis, transmission, etc.) to conduct normal vehicle operation or for use by diagnostic tools. Data stream information does not include engine calibration related information.

*Dedicated vehicle* means any motor vehicle engineered and designed to be operated using a single fuel. Flexible fuel vehicles and multi-fuel vehicles are not dedicated vehicles.

*Defeat device* means an auxiliary emission control device (AEC) that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use, unless:

- (1) Such conditions are substantially included in the Federal emission test procedure;
- (2) The need for the AEC is justified in terms of protecting the vehicle against damage or accident; or
- (3) The AEC does not go beyond the requirements of engine starting.

*Departure angle* means the smallest angle, in a plan side view of a motor vehicle, formed by the level surface on which the motor vehicle is standing and a line tangent to the rear tire static loaded radius arc and touching the underside of the motor vehicle rearward of the rear tire.

*Diesel* means a type of engine with operating characteristics significantly similar to the theoretical Diesel combustion cycle. The non-use of a throttle during normal operation is indicative of a diesel engine.

*Dispensed fuel temperature* means the temperature (deg. F or deg. C may be used) of the fuel being dispensed into the tank of the test vehicle during a refueling test.

*Diurnal breathing losses* means diurnal emissions.

*Diurnal emissions* means evaporative emissions resulting from the daily cycling of ambient temperatures.

*Drive train configuration* means a unique combination of engine code, transmission configuration, and axle ratio.

*Dual Fuel Vehicle* means any motor vehicle engineered and designed to be operated on two different fuels, but not on a mixture of the fuels.

*Durability Data Vehicle* means a vehicle used to generate durability data as required in this subpart.

*Durability group* means the basic classification unit of a manufacturer's product line used for the purpose of selecting a vehicle configuration to demonstrate durability and predict deterioration in accordance with § 86.1822-01.

*Durability useful life* means the highest useful life mileage out of the set of all useful life mileages that apply to a given vehicle. The durability useful life determines the duration of service accumulation on a durability data vehicle. The determination of durability useful life shall reflect any light-duty truck alternative useful life periods approved by the Administrator under § 86.1805-01(c). The determination of durability useful life shall exclude any standard and related useful life mileage for which the manufacturer has obtained a waiver of emission data submission requirements under § 86.1829-01.

*Element of design* means any control system (i.e., computer software, electronic control system, emission control system, computer logic), and/or control system calibrations, and/or the results of systems interaction, and/or hardware items on a motor vehicle or motor vehicle engine.

*Emission control system* is a unique group of emission control devices, auxiliary emission control devices, engine modifications and strategies, and other elements of design designated by the Administrator used to control exhaust emissions of a vehicle.

*Emission-related component* means any component which can affect emissions.

*Emission-related maintenance* means that maintenance which does substantially affect emissions or which is likely to affect the emissions deterioration of the vehicle during normal in-use operation, even if the maintenance is performed at some time other than that which is recommended.

*Engine code* means a unique combination within a test group of displacement, fuel injection (or carburetor) calibration, choke calibration, distributor calibration, auxiliary emission control devices, and other engine and emission control system components specified by the Administrator.

*Engine warm-up cycle* means sufficient vehicle operation such that the coolant temperature has risen by at least 40 deg. F from engine starting and reaches a minimum temperature of 160 deg. F.

*Environmental test cell* means a test cell capable of wind-speed, solar thermal load, ambient temperature, and humidity control or simulation which meets the requirements of § 86.161-00 for running emission tests with the air conditioning operating.

*EPA Enforcement Officer* means any officer or employee of the Environmental Protection Agency so



designated in writing by the Administrator (or by his/her designee).

*Equivalent test weight* means the weight, within an inertia weight class, which is used in the dynamometer testing of a vehicle and which is based on its loaded vehicle weight or adjusted loaded vehicle weight in accordance with the provisions of this Part.

*Evaporative emissions* means hydrocarbons emitted into the atmosphere from a motor vehicle, other than exhaust and crankcase emissions.

*Evaporative/refueling control system* means a unique combination within an evaporative/refueling family of canister adsorptive material, purge system configuration, purge strategy, and other parameters determined by the Administrator to affect evaporative and refueling emission control system durability or deterioration factors.

*Evaporative/refueling emission code* means a unique combination, in an evaporative/refueling family- evaporative emission control system combination, of purge system calibrations, fuel tank and carburetor bowl vent calibrations and other fuel system and evaporative emission control system components and calibrations specified by the Administrator.

*Evaporative/refueling family* means the basic classification unit of a manufacturers' product line used for the purpose of evaporative and refueling emissions test fleet selection and determined in accordance with § 86.1821-01.

*Evaporative/refueling vehicle configuration* means a unique combination of basic engine, engine code, body type, and evaporative emission code.

*Exhaust emissions* means substances emitted to the atmosphere from any opening downstream from the exhaust port of a motor vehicle engine.

*Exhaust Gas Recirculation Valve* means a device which directs a portion of the exhaust gas into the intake air stream for the purpose of controlling emissions.

*Federal Test Procedure*, or FTP means the test procedure as described in § 86.130-00(a) through (d) and (f) which is designed to measure urban driving tail pipe exhaust emissions and evaporative emissions over the Urban Dynamometer Driving Schedule as described in Appendix I to this part.

*Fixed liquid level gauge* means a type of liquid level gauge used on liquefied petroleum gas-fueled vehicles which uses a relatively small positive shutoff valve and is designed to indicate when the liquid level in the fuel tank being filled reaches the proper fill level. The

venting of fuel vapor and/or liquid fuel to the atmosphere during the refueling event is generally associated with the use of the fixed liquid level gauge.

*Flexible fuel vehicle* means any motor vehicle engineered and designed to be operated on a petroleum fuel, a methanol fuel, or any mixture of the two. Methanol-fueled vehicles that are only marginally functional when using gasoline (e.g., the engine has a drop in rated horsepower of more than 80 percent) are not flexible fuel vehicles.

*Fuel system* means the combination of fuel tank(s), fuel pump, fuel lines, and carburetor or fuel injection components, and includes all fuel system vents and fuel evaporative emission control system components.

*Gaseous fuel* means natural gas or liquefied petroleum gas.

*Gross vehicle weight* means the manufacturer's gross weight rating for the individual vehicle.

*Gross vehicle weight rating (GVWR)* means the value specified by the manufacturer as the maximum design loaded weight of a single vehicle.

*Hang-up* refers to the process of hydrocarbon molecules being adsorbed, condensed, or by any other method removed from the sample flow prior to reaching the instrument detector. It also refers to any subsequent desorption of the molecules into the sample flow when they are assumed to be absent.

*Heating degree day* means the number of degrees per day the daily average temperature is below 65 degrees Fahrenheit. The daily average temperature is the mean of the maximum and minimum temperature for a 24-hour period. The annual heating degree day value is derived by summing the daily heating degree days over a calendar year period.

*Heavy light-duty truck* means any light-duty truck rated greater than 6000 lbs GVWR. The LDT3 and LDT4 classifications comprise the heavy light-duty truck category.

*Heavy-duty engine* means any engine which the engine manufacturer could reasonably expect to be used for motive power in a heavy-duty vehicle.

*Heavy-duty vehicle* means any motor vehicle rated at more than 8,500 pounds GVWR or that has a vehicle curb weight of more than 6,000 pounds or that has a basic vehicle frontal area in excess of 45 square feet.

*High altitude* means any elevation over 1,219 meters (4,000 feet).

*High-altitude conditions* means a test altitude of 1,620 meters (5,315 feet), plus or minus 100 meters (328 feet), or equivalent observed barometric test conditions of 83.3 kPa (24.2 inches Hg) plus or minus 1 kPa (0.30 Hg).

*Hot-soak emissions* and *Hot-soak losses* means evaporative emissions after termination of engine operation.

*Incomplete truck* means any truck which does not have the primary load carrying device or container attached.

*Indirect information* means any information that is not specifically contained in the service literature, but is contained in items such as tools or equipment provided to franchised dealers (or others).

*Inertia weight class* means the class, which is a group of equivalent test weights, into which a vehicle is grouped based on its test weight basis in accordance with the provisions of this Part 86.

*Integrated refueling emission control system* means a system where vapors resulting from refueling are stored in a common vapor storage unit(s) with other evaporative emissions of the vehicle and are purged through a common purge system.

*Intermediary* means any individual or entity, other than a manufacturer, which provides service or equipment to automotive technicians.

*Intermediate temperature cold testing* means testing done pursuant to the driving cycle and testing conditions contained in subpart C of this part, at temperatures between 25 deg. F (-4 deg. C) and 68 deg. F (20 deg. C).

*In-use vehicle* means a customer owned and operated vehicle which is not under the control of the manufacturer, dealerships or their agents. Leased vehicles will be considered in-use vehicles for the purpose of this subpart if the vehicles meet the criteria specified in § 86.1845-01.

*In-use verification program (IUV)* means the testing program conducted by manufacturers which gathers in-use emission data in accordance with § 86.1848-01.

*Light light-duty truck* means any light-duty truck rated up through 6000 lbs GVWR. The LDT1 and LDT2 classifications compose the light light-duty truck category.

*Light-duty truck* means any motor vehicle rated at 8,500 pounds GVWR or less which has a curb weight of 6,000 pounds or less and which has a basic vehicle frontal area of 45 square feet or less, which is:

(1) Designed primarily for purposes of transportation of property or is a derivation of such a vehicle; or

(2) Designed primarily for transportation of persons and has a capacity of more than 12 persons; or

(3) Available with special features enabling off-street or off-highway operation and use.



*Light-duty truck 1 (LDT1)* means any light light-duty truck up through 3750 lbs loaded vehicle weight.

*Light-duty truck 2 (LDT2)* means any light light-duty truck greater than 3750 lbs loaded vehicle weight.

*Light-duty truck 3 (LDT3)* means any heavy light-duty truck up through 5750 lbs adjusted loaded vehicle weight.

*Light-duty truck 4 (LDT4)* means any heavy light-duty truck greater than 5750 lbs adjusted loaded vehicle weight.

*Light-duty vehicle* means a passenger car or passenger car derivative capable of seating 12 passengers or less.

*Liquefied petroleum gas* means a liquid hydrocarbon fuel that is stored under pressure and is composed primarily of species that are gases at atmospheric conditions (temperature = 25 deg. C and pressure = 1 atm), excluding natural gas.

*Loaded vehicle weight* means the vehicle's curb weight plus 300 pounds.

*Low altitude* means any elevation equal to or less than 1,219 meters (4,000 feet).

*Low altitude conditions* means a test altitude less than 549 meters (1,800 feet).

*Malfunction* means not operating according to specifications (e.g., those specifications listed in the certification application).

*Methanol-fueled vehicle* means any motor vehicle or motor vehicle engine that is engineered and designed to be operated using methanol fuel (i.e., a fuel that contains at least 50 percent methanol (CH<sub>3</sub>OH) by volume) as fuel. Model means a specific combination of car line, body style, and drivetrain configuration.

*Model type* means a unique combination of car line, basic engine, and transmission class.

*Model year* means the manufacturer's annual production period (as determined by the Administrator) which includes January 1 of such calendar year: Provided that if the manufacturer has no annual production period, the term "model year" shall mean the calendar year.

*Multi-fuel* means capable of operating on two or more different fuel types, either separately or simultaneously.

*Natural gas* means a fuel whose primary constituent is methane.

*Nominal fuel tank capacity* means the volume of the fuel tank(s), specified by the manufacturer to the nearest tenth of a U.S. gallon, which may be filled with fuel from the fuel tank filler inlet.

*Non-emission-related maintenance* means that maintenance which does not substantially affect emissions and which does not have a lasting effect on the emissions deterioration of the vehicle or

engine during normal in-use operation once the maintenance is performed.

*Non-integrated refueling emission control system* means a system where fuel vapors from refueling are stored in a vapor storage unit assigned solely to the function of storing refueling vapors.

*Non-Methane Hydrocarbon Equivalent* means the sum of the carbon mass emissions of non-oxygenated non-methane hydrocarbons, methanol, formaldehyde, or other organic compounds that are separately measured, expressed as gasoline-fueled vehicle hydrocarbons. In the case of exhaust emissions, the hydrogen-to-carbon ratio of the equivalent hydrocarbon is 1.85:1. In the case of diurnal and hot soak emissions, the hydrogen-to-carbon ratios of the equivalent hydrocarbons are 2.33:1 and 2.2:1, respectively.

*Non-oxygenated hydrocarbon* means organic emissions measured by a flame ionization detector, excluding methanol.

*N/V* means the ratio of engine speed in revolutions per minute (rpm) to vehicle speed in miles per hour in the top transmission gear. At the manufacturer's option, either the 1:1 transmission gear ratio or the lowest numerical gear ratio available in the transmission will be used to determine N/V.

*Option*, in the context of a vehicle design feature, means any available equipment or feature not standard equipment on a model.

*Original Equipment Manufacturer (OEM)* means the manufacturer responsible for the design and production of a vehicle or component. This manufacturer will be fully knowledgeable of any production changes made to the design of the vehicle or component and shall be able to track the individual vehicles or component with regard to such production changes.

*Otto-cycle* means type of engine with operating characteristics significantly similar to the theoretical Otto combustion cycle. The use of a throttle during normal operation is indicative of an Otto-cycle engine.

*Oxides of nitrogen* means the sum of the nitric oxide and nitrogen dioxide contained in a gas sample as if the nitric oxide were in the form of nitrogen dioxide.

*Petroleum fuel* means liquid fuels normally derived from crude oil, excluding liquefied petroleum gas. Gasoline and diesel fuel are petroleum fuels.

*Precision* means the standard deviation of replicated measurements.

*Proven emission control systems* are emission control components or systems

(and fuel metering systems) that have completed full durability testing evaluation over a vehicle's useful life in some other certified test group, or have completed bench or road testing demonstrated to be equal or more severe than certification mileage accumulation requirements. Alternatively, proven components or systems are those that are determined by EPA to be of comparable functional quality and manufactured using comparable materials and production techniques as components or systems which have been durability demonstrated in some other certified test group. In addition, the components or systems must be employed in an operating environment (e.g., temperature, exhaust flow, etc.) similar to that experienced by the original or comparable components or systems in the original certified test group.

*Recall program* means the program administered by the Agency under the authority of CAA section 207, and regulations in 40 CFR part 85.

*Reconfigured emission-data vehicle* means an emission-data vehicle obtained by modifying a previously used emission-data vehicle to represent another emission-data vehicle.

*Refueling emissions* means evaporative emissions that emanate from a motor vehicle fuel tank(s) during a refueling operation.

*Refueling emissions canister(s)* means any vapor storage unit(s) that is exposed to the vapors generated during refueling.

*Resting losses* means evaporative emissions that may occur continuously, that are not diurnal emissions, hot soak emissions, refueling emissions, running losses, or spitback emissions.

*Running change* means a change to a vehicle or addition of a model which occurs after certification but during vehicle production.

*Running losses* means evaporative emissions that occur during vehicle operation.

*SC03* means the test cycle, described in § 86.160-00 and listed in Appendix I, paragraph (h), of this part, which is designed to represent driving immediately following startup.

*Scheduled maintenance* means any adjustment, repair, removal, disassembly, cleaning, or replacement of vehicle components or systems which is performed on a periodic basis to prevent part failure or vehicle (if the engine were installed in a vehicle) malfunction, or anticipated as necessary from inspection to correct an overt indication of vehicle malfunction or failure for which periodic maintenance is not appropriate.

*Similar emission control systems* are engine, fuel metering and emission control system combinations which use the same fuel (e.g., gasoline, diesel, etc.), combustion cycle (e.g., two or four stroke), general type of fuel system (e.g., carburetor or fuel injection), catalyst system (e.g., none, oxidation, three-way plus oxidation, three-way only, etc.), fuel control system (e.g., feedback or non-feedback), secondary air system (e.g., equipped or not equipped) and exhaust gas recirculation (EGR) (e.g., equipped or not equipped).

*Span gas* means a gas of known concentration which is used routinely to set the output level of an analyzer.

*Special features enabling off-street or off-highway operation and use* means a vehicle that has:

- (1) Four-wheel drive; and
- (2) At least four of the following characteristics calculated when the automobile is at curb weight, on a level surface, with the front wheels parallel to the vehicle's longitudinal centerline, and the tires inflated to the manufacturer's recommended pressure; approach angle of not less than 28 degrees, breakover angle of not less than 14 degrees, departure angle of not less than 20 degrees, running clearance of not less than 8 inches, and front and rear axle clearances of not less than 7 inches each.

*Spitback emissions* means evaporative emissions resulting from the loss of liquid fuel that is emitted from a vehicle during a fueling operation.

*Standard equipment* means those features or equipment which are marketed on a vehicle over which the purchaser can exercise no choice.

*Static loaded radius arc* means a portion of a circle whose center is the center of a standard tire-rim combination of an automobile and whose radius is the distance from that center to the level surface on which the automobile is standing, measured with the automobile at curb weight, the wheel parallel to the vehicle's longitudinal centerline, and the tire inflated to the manufacturer's recommended pressure.

*Supplemental FTP (SFTP)* means the additional test procedures designed to measure emissions during aggressive and microtransient driving, as described in § 86.159-00 over the US06 cycle, and also the test procedure designed to measure urban driving emissions while the vehicle's air conditioning system is operating, as described in § 86.160-00 over the SC03 cycle.

*Tank fuel volume* means the volume of fuel in the fuel tank(s), which is determined by taking the manufacturer's nominal fuel tank(s) capacity and

multiplying by 0.40. The result is rounded to the nearest tenth of a U.S. gallon in accordance with the Rounding-Off Method specified in ASTM E29-93a, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1)

*Test group* means the basic classification unit within a durability group used for the purpose of demonstrating compliance with exhaust emission standards in accordance with § 86.1841-01. The test group is also used as a classification unit for gathering in-use data for the In-Use Verification Program (IUV) in accordance with § 86.1848-01.

*Test weight basis* means the basis on which equivalent test weight is determined in accordance with § 86.129-00 of subpart B of this part.

*Throttle* means a device used to control an engine's power output by limiting the amount of air entering the combustion chamber.

*Total Hydrocarbon Equivalent* means the sum of the carbon mass emissions of non-oxygenated hydrocarbons, methanol, formaldehyde or other organic compounds that are separately measured, expressed as gasoline-fueled vehicle hydrocarbons. In the case of exhaust emissions, the hydrogen-to-carbon ratio of the equivalent hydrocarbon is 1.85:1. In the case of diurnal and hot soak emissions, the hydrogen-to-carbon ratios of the equivalent hydrocarbons are 2.33:1 and 2.2:1, respectively.

*Transmission class* means the basic type of transmission, e.g., manual, automatic, semiautomatic.

*Transmission configuration* means a unique combination, within a transmission class, of the number of the forward gears and, if applicable, overdrive. The Administrator may further subdivide a transmission configuration (based on such criteria as gear ratios, torque converter multiplication ratio, stall speed and shift calibration, etc.), if she/he determines that significant fuel economy or exhaust emission differences exist within that transmission configuration.

*Unproven emission control systems* are emission control components or systems (and fuel metering systems) that do not qualify as proven emission control systems.

*Unscheduled maintenance* means any adjustment, repair, removal disassembly, cleaning, or replacement of vehicle components or systems which is performed to correct a part failure or vehicle (if the engine were installed in

a vehicle) malfunction which was not anticipated.

*US06* means the test cycle, described in § 86.159-00 and listed in appendix I, paragraph (g), of this part, which is designed to evaluate emissions during aggressive and microtransient driving.

*Useful life* means the period of use or time during which an emission standard applies to light-duty vehicles and light-duty trucks, as described in § 86.1805-01.

*Van* means a light-duty truck having an integral enclosure, fully enclosing the driver compartment and load carrying device, and having no body sections protruding more than 30 inches ahead of the leading edge of the windshield.

*Vehicle configuration* means a unique combination of basic engine, engine code, inertia weight class, transmission configuration, and axle ratio.

*Zero (0) miles* means that point after initial engine starting (not to exceed 100 miles of vehicle operation, or three hours of engine operation) at which normal assembly line operations and adjustments are completed, and including emission testing, if performed.

#### § 86.1804-01 Acronyms and abbreviations.

The following abbreviations apply to this subpart:

A/C—Air conditioning.  
 AECD—Auxiliary emission control device.  
 ALVW—Adjusted Loaded Vehicle Weight.  
 API—American Petroleum Institute.  
 ASTM—American Society for Testing and Materials.  
 C—Celsius.  
 cfm—Cubic feet per minute.  
 CFV—Critical flow venturi.  
 CFV-CVS—Critical flow venturi—constant volume sampler.  
 CH<sub>3</sub>OH—Methanol.  
 CID—Cubic inch displacement.  
 Cl—Chemiluminescence.  
 CO—Carbon monoxide.  
 CO<sub>2</sub>—Carbon dioxide.  
 conc.—Concentration.  
 CST—Certification Short Test.  
 cu. in.—Cubic inch(es).  
 CVS—Constant volume sampler.  
 DDV—Durability Data Vehicle.  
 deg.—Degree(s).  
 DNP—2,4-dinitrophenylhydrazine.  
 EDV—Emission Data Vehicle.  
 EP—End point.  
 ETW—Equivalent test weight.  
 F—Fahrenheit.  
 FID—Flame ionization detector.  
 ft.—Feet.  
 FTP—Federal Test Procedure.  
 g—gram(s).  
 gal.—U.S. gallon(s).  
 GC—Gas chromatograph.  
 GVW—Gross vehicle weight.  
 GVWR—Gross vehicle weight rating.  
 H<sub>2</sub>O—Water.  
 HC—Hydrocarbon(s).

HFID—Heated flame ionization detector.  
 Hg—Mercury.  
 hp—Horsepower.  
 HPLC—High-pressure liquid chromatography.  
 IBP—Initial boiling point.  
 in.—Inch(es).  
 IUVP—In-Use Verification Program.  
 K—Kelvin.  
 kg—Kilogram(s).  
 km—Kilometer(s).  
 kPa—Kilopascal(s).  
 lb.—Pound(s).  
 LDT1—Light-duty truck 1.  
 LDT2—Light-duty truck 2.  
 LDT3—Light-duty truck 3.  
 LDT4—Light-duty truck 4.  
 LPG—Liquefied Petroleum Gas.  
 m—Meter(s).  
 max.—Maximum.  
 mg—Milligram(s).  
 mi.—Mile(s).  
 min.—Minimum.  
 ml—Milliliter(s).  
 mm—Millimeter(s).  
 mph—Miles per hour.  
 mV—Millivolt  
 N2—Nitrogen.  
 NDIR—Nondispersive infrared.  
 NMHC—Nonmethane Hydrocarbons.  
 NMHCE—Non-Methane Hydrocarbon Equivalent.  
 NO—nitric oxide.  
 No.—Number.  
 O2—Oxygen.  
 OEM—Original equipment manufacturer.  
 NO2—Nitrogen dioxide.  
 NOx—Oxides of nitrogen.  
 Pb—Lead.  
 pct.—Percent.  
 PDP—CVS—Positive displacement pump—constant volume sampler.  
 ppm—Parts per million by volume.  
 PM—Particulate Matter.  
 ppm C—Parts per million, carbon.  
 psi—Pounds per square inch.  
 R—Rankin.  
 rpm—Revolutions per minute.  
 RVP—Reid vapor pressure.  
 s—Second(s).  
 SAE—Society of Automotive Engineers.  
 SFTP—Supplemental Federal Test Procedure.  
 SI—International system of units.  
 TD—dispensed fuel temperature.  
 THC—Total Hydrocarbons.  
 THCE—Total Hydrocarbon Equivalent.  
 UDDS—Urban dynamometer driving schedule.  
 UV—Ultraviolet.  
 vs—Versus.  
 W—Watt(s).  
 WOT—Wide open throttle.  
 Wt.—Weight.

#### § 86.1805-01 Useful life.

(a) Intermediate useful life is a period of use of 5 years or 50,000 miles, which ever occurs first.

(b) Full useful life is as follows:

(1) For light-duty vehicles and light-duty trucks full useful life is a period of use of 10 years or 100,000 miles, which ever occurs first.

(2) For heavy light-duty trucks full useful life is a period of use of 11 years

or 120,000 miles, which ever occurs first.

(c) Manufacturers may petition the Administrator to provide alternative useful life periods for light-duty trucks when they believe that the useful life periods are significantly unrepresentative for one or more test groups (either too long or too short). 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. Alternative useful life periods will be granted only for THC, THCE, and idle CO requirements.

#### § 86.1806-01 On-board diagnostics.

(a) All light-duty vehicles and light-duty trucks shall be equipped with an on-board diagnostic (OBD) system capable of monitoring, for each vehicle's useful life, all emission-related powertrain systems or components. All systems and components required to be monitored by these regulations shall be evaluated periodically, but no less frequently than once per Urban Dynamometer Driving Schedule as defined in Appendix I, paragraph (a), of this part, or similar trip as approved by the Administrator.

(b) *Malfunction descriptions.* The OBD system shall detect and identify malfunction in all monitored emission-related powertrain systems or components according to the following malfunction definitions as measured and calculated in accordance with test procedures set forth in subpart B of this part, excluding those test procedures described in § 86.158-00. Paragraph (b)(1) of this section does not apply to diesel cycle light-duty vehicles or diesel cycle light-duty trucks, except where the catalyst is needed for NMHC control. Paragraphs (b)(2), (b)(3), and (b)(4) of this section do not apply to diesel cycle light-duty vehicles or diesel cycle light-duty trucks.

(1) Catalyst deterioration or malfunction before it results in an increase in NMHC emissions 1.5 times the NMHC standard, as compared to the NMHC emission level measured using a representative 4000 mile catalyst system.

(2) Engine misfire resulting in exhaust emissions exceeding 1.5 times the applicable standard for NMHC, CO or NO<sub>x</sub>; and any misfire capable of damaging the catalytic converter.

(3) Oxygen sensor deterioration or malfunction resulting in exhaust

emissions exceeding 1.5 times the applicable standard for NMHC, CO or NO<sub>x</sub>.

(4) Any vapor leak in the evaporative and/or refueling system (excluding the tubing and connections between the purge valve and the intake manifold) greater than or equal in magnitude to a leak caused by a 0.040 inch diameter orifice; any absence of evaporative purge air flow from the complete evaporative emission control system. On vehicles with fuel tank capacity greater than 25 gallons, the Administrator may, following a request from the manufacturer, revise the size of the orifice to the smallest orifice feasible, based on test data, if the most reliable monitoring method available cannot reliably detect a system leak equal to a 0.040 inch diameter orifice.

(5) Any deterioration or malfunction occurring in a powertrain system or component directly intended to control emissions, including but not necessarily limited to, the exhaust gas recirculation (EGR) system, if equipped, the secondary air system, if equipped, and the fuel control system, singularly resulting in exhaust emissions exceeding 1.5 times the applicable emission standard for NMHC, CO or NO<sub>x</sub>. For vehicles equipped with a secondary air system, a functional check, as described in paragraph (b)(6) of this section, may satisfy the requirements of this paragraph provided the manufacturer can demonstrate that deterioration of the flow distribution system is unlikely. This demonstration is subject to Administrator approval and, if the demonstration and associated functional check are approved, the diagnostic system shall indicate a malfunction when some degree of secondary airflow is not detectable in the exhaust system during the check. For vehicles equipped with positive crankcase ventilation (PCV), monitoring of the PCV system is not necessary provided the manufacturer can demonstrate to the Administrator's satisfaction that the PCV system is unlikely to fail.

(6) Any other deterioration or malfunction occurring in an electronic emission-related powertrain system or component not otherwise described above that either provides input to or receives commands from the on-board computer and has a measurable impact on emissions; monitoring of components required by this paragraph shall be satisfied by employing electrical circuit continuity checks and rationality checks for computer input components (input values within manufacturer specified ranges), and functionality checks for computer

output components (proper functional response to computer commands) except that the Administrator may waive such a rationality or functionality check where the manufacturer has demonstrated infeasibility; malfunctions are defined as a failure of the system or component to meet the electrical circuit continuity checks or the rationality or functionality checks.

(7) Oxygen sensor or any other component deterioration or malfunction which renders that sensor or component incapable of performing its function as part of the OBD system shall be detected and identified on vehicles so equipped.

(c) *Malfunction indicator light.* The OBD system shall incorporate a malfunction indicator light (MIL) readily visible to the vehicle operator. When illuminated, it shall display "Check Engine," "Service Engine Soon," a universally recognizable engine symbol, or a similar phrase or symbol approved by the Administrator. A vehicle shall not be equipped with more than one general purpose malfunction indicator light for emission-related problems; separate specific purpose warning lights (e.g. brake system, fasten seat belt, oil pressure, etc.) are permitted. The use of red for the OBD-related malfunction indicator light is prohibited.

(d) *MIL illumination.* The MIL shall illuminate and remain illuminated when any of the conditions specified in paragraph (b) of this section are detected and verified, or whenever the engine control enters a default or secondary mode of operation considered abnormal for the given engine operating conditions. The MIL shall blink once per second under any period of operation during which engine misfire is occurring and catalyst damage is imminent. If such misfire is detected again during the following driving cycle (i.e., operation consisting of, at a minimum, engine start-up and engine shut-off) or the next driving cycle in which similar conditions are encountered, the MIL shall maintain a steady illumination when the misfire is not occurring and shall remain illuminated until the MIL extinguishing criteria of this section are satisfied. The MIL shall also illuminate when the vehicle's ignition is in the "key-on" position before engine starting or cranking and extinguish after engine starting if no malfunction has previously been detected. If a fuel system or engine misfire malfunction has previously been detected, the MIL may be extinguished if the malfunction does not reoccur during three subsequent sequential trips during which similar conditions are

encountered (engine speed is within 375 rpm, engine load is within 20 percent, and the engine's warm-up status is the same as that under which the malfunction was first detected), and no new malfunctions have been detected. If any malfunction other than a fuel system or engine misfire malfunction has been detected, the MIL may be extinguished if the malfunction does not reoccur during three subsequent sequential trips during which the monitoring system responsible for illuminating the MIL functions without detecting the malfunction, and no new malfunctions have been detected. Upon Administrator approval, statistical MIL illumination protocols may be employed, provided they result in comparable timeliness in detecting a malfunction and evaluating system performance, i.e., three to six driving cycles would be considered acceptable.

(e) *Storing of computer codes.* The emission control diagnostic system shall record and store in computer memory diagnostic trouble codes and diagnostic readiness codes indicating the status of the emission control system. These codes shall be available through the standardized data link connector per SAE J1979 specifications as incorporated by reference in paragraph (h) of this section.

(1) A diagnostic trouble code shall be stored for any detected and verified malfunction causing MIL illumination. The stored diagnostic trouble code shall identify the malfunctioning system or component as uniquely as possible. At the manufacturer's discretion, a diagnostic trouble code may be stored for conditions not causing MIL illumination. Regardless, a separate code should be stored indicating the expected MIL illumination status (i.e., MIL commanded "ON," MIL commanded "OFF").

(2) For a single misfiring cylinder, the diagnostic trouble code(s) shall uniquely identify the cylinder, unless the manufacturer submits data and/or engineering evaluations which adequately demonstrate that the misfiring cylinder cannot be reliably identified under certain operating conditions. The diagnostic trouble code shall identify multiple misfiring cylinder conditions; under multiple misfire conditions, the misfiring cylinders need not be uniquely identified if a distinct multiple misfire diagnostic trouble code is stored.

(3) The diagnostic system may erase a diagnostic trouble code if the same code is not re-registered in at least 40 engine warm-up cycles, and the malfunction indicator light is not illuminated for that code.

(4) Separate status codes, or readiness codes, shall be stored in computer memory to identify correctly functioning emission control systems and those emission control systems which require further vehicle operation to complete proper diagnostic evaluation. A readiness code need not be stored for those monitors that can be considered continuously operating monitors (e.g., misfire monitor, fuel system monitor, etc.). Readiness codes should never be set to "not ready" status upon key-on or key-off; intentional setting of readiness codes to "not ready" status via service procedures must apply to all such codes, rather than applying to individual codes. Subject to Administrator approval, if monitoring is disabled for a multiple number of driving cycles (i.e., more than one) due to the continued presence of extreme operating conditions (e.g., ambient temperatures below 40°F, or altitudes above 8000 feet), readiness for the subject monitoring system may be set to "ready" status without monitoring having been completed. Administrator approval shall be based on the conditions for monitoring system disablement, and the number of driving cycles specified without completion of monitoring before readiness is indicated.

(f) *Available diagnostic data.* (1) Upon determination of the first malfunction of any component or system, "freeze frame" engine conditions present at the time shall be stored in computer memory. Should a subsequent fuel system or misfire malfunction occur, any previously stored freeze frame conditions shall be replaced by the fuel system or misfire conditions (whichever occurs first). Stored engine conditions shall include, but are not limited to: engine speed, open or closed loop operation, fuel system commands, coolant temperature, calculated load value, fuel pressure, vehicle speed, air flow rate, and intake manifold pressure if the information needed to determine these conditions is available to the computer. For freeze frame storage, the manufacturer shall include the most appropriate set of conditions to facilitate effective repairs. If the diagnostic trouble code causing the conditions to be stored is erased in accordance with paragraph (d) of this section, the stored engine conditions may also be erased.

(2) The following data in addition to the required freeze frame information shall be made available on demand through the serial port on the standardized data link connector, if the information is available to the on-board computer or can be determined using

information available to the on-board computer: Diagnostic trouble codes, engine coolant temperature, fuel control system status (closed loop, open loop, other), fuel trim, ignition timing advance, intake air temperature, manifold air pressure, air flow rate, engine RPM, throttle position sensor output value, secondary air status (upstream, downstream, or atmosphere), calculated load value, vehicle speed, and fuel pressure. The signals shall be provided in standard units based on SAE specifications incorporated by reference in paragraph (h) of this section. Actual signals shall be clearly identified separately from default value or limp home signals.

(3) For all emission control systems for which specific on-board evaluation tests are conducted (catalyst, oxygen sensor, etc.), the results of the most recent test performed by the vehicle, and the limits to which the system is compared shall be available through the standardized data link connector per SAE J1979 specifications as incorporated by reference in paragraph (h) of this section.

(4) Access to the data required to be made available under this section shall be unrestricted and shall not require any access codes or devices that are only available from the manufacturer.

(g) The emission control diagnostic system is not required to evaluate systems or components during malfunction conditions if such evaluation would result in a risk to safety or failure of systems or components. Additionally, the diagnostic system is not required to evaluate systems or components during operation of a power take-off unit such as a dump bed, snow plow blade, or aerial bucket, etc.

(h) *Incorporation by reference materials.* The emission control diagnostic system shall provide for standardized access and conform with the following Society of Automotive Engineers (SAE) standards and/or the following International Standards Organization (ISO) standards. The following documents are incorporated by reference. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be inspected at Docket No. A-90-35 at EPA's Air docket (LE-131), room 1500 M, 1st Floor, Waterside Mall, 401 M Street, SW., Washington, DC, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(1) *SAE material.* Copies of these materials may be obtained from the Society of Automotive Engineers, Inc.,

400 Commonwealth Drive, Warrendale, PA 15096-0001.

(i) SAE J1850 "Class B Data Communication Network Interface," (July 1995) shall be used as the on-board to off-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 checksums.

(ii) Basic diagnostic data (as specified in §§ 86.094-17(e) and (f)) shall be provided in the format and units in SAE J1979 July 1996 E/E Diagnostic Test Modes."

(iii) Diagnostic trouble codes shall be consistent with SAE J2012 July 1996 "Recommended Practices for Diagnostic Trouble Code Definitions."

(iv) The connection interface between the OBD system and test equipment and diagnostic tools shall meet the functional requirements of SAE J1962 January 1995 "Diagnostic Connector."

(2) *ISO materials.* Copies of these materials may be obtained from the International Organization for Standardization, Case Postale 56, CH-1211 Geneva 20, Switzerland.

(i) ISO 9141-2 February 1994 "Road vehicles—Diagnostic systems—Part 2: CARB requirements for interchange of digital information," may be used as an alternative to SAE J1850 as the on-board to off-board communications protocol.

(ii) [Reserved]

(i) *Deficiencies and alternate fueled vehicles.* Upon application by the manufacturer, the Administrator may accept an OBD system as compliant even though specific requirements are not fully met. Such compliances without meeting specific requirements, or deficiencies, will be granted only if compliance would be infeasible or unreasonable considering such factors as, but not limited to, technical feasibility of the given monitor, 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 or software 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. Furthermore, EPA will not accept any deficiency requests that include the complete lack of a major diagnostic monitor ("major" diagnostic monitors being those for the catalyst, oxygen sensor, engine misfire, and evaporative leaks), with the possible exception of the special

provisions for alternate fueled vehicles. For alternate fueled vehicles (e.g. natural gas, liquefied petroleum gas, methanol, ethanol), beginning with the model year for which alternate fuel emission standards are applicable and extending through the 2004 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, alternate fuel vehicles shall be equipped with an OBD system meeting OBD requirements to the extent feasible as approved by the Administrator.

(j) Demonstration of compliance with California OBD II requirements (Title 13 California Code Sec. 1968.1), as modified pursuant to California Mail Out #97-24 (December 9, 1997), shall satisfy the requirements of this section, except that compliance with Title 13 California Code Secs. 1968.1(b)(4.2.2), pertaining to evaporative leak detection, and 1968.1(d), pertaining to tampering protection, are not required to satisfy the requirements of this section, and the deficiency fine provisions of 1968.1(m)(6.1) and (6.2) shall not apply.

(k) For engine families required to have an emission control diagnostic system (an OBD system), certification will not be granted if, for any test vehicle approved by the Administrator in consultation with the manufacturer, the malfunction indicator light does not illuminate under any of the following circumstances, unless the manufacturer can demonstrate that any identified OBD problems discovered during the Administrator's evaluation will be corrected on production vehicles. Only paragraphs (k)(5) and (k)(6) of this section apply to diesel cycle vehicles and diesel cycle trucks where such vehicles and trucks are so equipped.

(1) A catalyst is replaced with a deteriorated or defective catalyst, or an electronic simulation of such, resulting in an increase of 1.5 times the NMHC standard above the NMHC emission level measured using a representative 4000 mile catalyst system.

(2) An engine misfire condition is induced resulting in exhaust emissions exceeding 1.5 times the applicable standards for NMHC, CO or NO<sub>x</sub>.

(3) Any oxygen sensor is replaced with a deteriorated or defective oxygen sensor, or an electronic simulation of such, resulting in exhaust emissions exceeding 1.5 times the applicable standard for NMHC, CO or NO<sub>x</sub>.

(4) A vapor leak is introduced in the evaporative and/or refueling system (excluding the tubing and connections between the purge valve and the intake

manifold) greater than or equal in magnitude to a leak caused by a 0.040 inch diameter orifice, or the evaporative purge air flow is blocked or otherwise eliminated from the complete evaporative emission control system.

(5) A malfunction condition is induced in any emission-related powertrain system or component, including but not necessarily limited to, the exhaust gas recirculation (EGR) system, if equipped, the secondary air system, if equipped, and the fuel control system, singularly resulting in exhaust emissions exceeding 1.5 times the applicable emission standard for NMHC, CO or NO<sub>x</sub>.

(6) A malfunction condition is induced in an electronic emission-related powertrain system or component not otherwise described above that either provides input to or receives commands from the on-board computer resulting in a measurable impact on emissions.

#### § 86.1807-01 Vehicle labeling.

(a) The manufacturer of any motor vehicle subject to the applicable emission standards of this subpart, shall, at the time of manufacture, affix a permanent legible label, of the type and in the manner described in this section, containing the information prescribed in this section, to all production models of such vehicles available for sale to the public and covered by a Certificate of Conformity under § 86.1848-01.

(1) A permanent, legible label shall be affixed in a readily visible position in the engine compartment.

(2) The label shall be affixed by the vehicle manufacturer who has been issued the Certificate of Conformity for such vehicle, in such manner that it cannot be removed without destroying or defacing the label. The label shall not be affixed to any equipment which is easily detached from such vehicle.

(3) The label shall contain the following information lettered in the English language in block letters and numerals, which shall be of a color that contrasts with the background of the label:

(i) The label heading: Vehicle Emission Control Information;

(ii) Full corporate name and trademark of manufacturer;

(iii) Engine displacement (in cubic inches or liters), test group identification and evaporative/refueling family identification;

(iv) Engine tune-up specifications and adjustments, as recommended by the manufacturer in accordance with the applicable emission standards, including but not limited to idle

speed(s), ignition timing, the idle air-fuel mixture setting procedure and value (e.g., idle CO, idle air-fuel ratio, idle speed drop), high idle speed, initial injection timing and valve lash (as applicable), as well as other parameters deemed necessary by the manufacturer. These specifications should indicate the proper transmission position during tune-up and what accessories (e.g., air conditioner), if any, should be in operation;

(v) An unconditional statement of compliance with the appropriate model year U.S. EPA regulations which apply to light-duty vehicles or light-duty trucks;

(vi) The exhaust emission standards to which the test group is certified, and the corresponding exhaust emission standards which the test group must meet in-use. In lieu of this requirement, the standardized test group name designated by the Agency may be used;

(vii) The vacuum hose routing diagram is required if the vehicles are equipped with vacuum actuated emission and emission-related components. The manufacturer may, at its option, use a separate label for the vacuum hose diagram provided that the vacuum hose diagram is placed in a visible and accessible position as described in this section;

(viii) Vehicles granted final admission under 40 CFR 85.1505 must comply with the labeling requirements contained in 40 CFR 85.1510;

(ix) (A) For vehicles exempted from compliance with certain revised performance warranty procedures, as specified in § 86.1829-01(b)(4)(iii), a statement indicating the specific performance warranty test(s) of 40 CFR part 85, subpart W, not to be performed.

(B) For vehicles exempted from compliance with all revised performance warranty procedures, as specified in § 86.1829-01(b)(4)(iv), a statement indicating:

(1) That none of the performance warranty tests of 40 CFR part 85, subpart W, is to be performed; and

(2) The name of the Administrator-approved alternative test procedure to be performed;

(x) For vehicles designed to be capable of operating on fuels other than gasoline or diesel, the statement "This vehicle is certified to operate on [specify fuel(s)]".

(b) The provisions of this section shall not prevent a manufacturer from also reciting on the label that such vehicle (or engine) conforms to any applicable state emission standards for new motor vehicles (or new motor vehicle engines) or any other information that such manufacturer deems necessary for, or

useful to, the proper operation and satisfactory maintenance of the vehicle (or engine).

(c)(1) The manufacturer of any light-duty vehicle or light-duty truck subject to the emission standards of this subpart shall, in addition and subsequent to setting forth those statements on the label required by the Department of Transportation (DOT) pursuant to 49 CFR 567.4, set forth on the DOT label or on an additional label located in proximity to the DOT label and affixed as described in 49 CFR 567.4(b), the following information in the English language, lettered in block letters and numerals not less than three thirty-seconds of an inch high, of a color that contrasts with the background of the label:

(i) The heading: "Vehicle Emission Control Information."

(ii)(A) For light-duty vehicles, the statement: "This Vehicle Conforms to U.S. EPA Regulations Applicable to XXX-Fueled 20XX Model Year New Motor Vehicles."

(B) For light-duty trucks, the statement: "This Vehicle Conforms to U.S. EPA Regulations Applicable to XXX-Fueled 20XX Model Year New Light-Duty Trucks."

(iii) One of the following statements, as applicable, in letters and numerals not less than six-thirty-seconds of an inch high and of a color that contrasts with the background of the label:

(A) For all vehicles certified as noncatalyst-equipped: "NON-CATALYST";

(B) For all vehicles certified as catalyst-equipped which are included in a manufacturer's catalyst control program for which approval has been given by the Administrator: "CATALYST—APPROVED FOR IMPORT";

(C) For all vehicles certified as catalyst-equipped which are not included in a manufacturer's catalyst control program for which prior approval has been given by the Administrator: "CATALYST".

(2) In lieu of selecting either of the labeling options of paragraph (c)(1) of this section, the manufacturer may add the information required by paragraph (c)(1)(iii) of this section to the label required by paragraph (a) of this section. The required information will be set forth in the manner prescribed by paragraph (c)(1)(iii) of this section.

(d) Incomplete light-duty trucks shall have the following prominent statement printed on the label required by paragraph (a)(3)(v) of this section: "This vehicle conforms to U.S. EPA regulations applicable to 20xx Model year Light-Duty Trucks under the

special provisions of § 86.1801-01(c)(1) when it does not exceed XXX pounds in curb weight, XXX pounds in gross vehicle weight rating, and XXX square feet in frontal area."

(e) The manufacturer of any incomplete light-duty vehicle or light-duty truck shall notify the purchaser of such vehicle of any curb weight, frontal area, or gross vehicle weight rating limitations affecting the emission certificate applicable to that vehicle. This notification shall be transmitted in a manner consistent with National Highway Safety Administration safety notification requirements published in 49 CFR part 568.

(f) All light-duty vehicles and light-duty trucks shall comply with SAE Recommended Practices J1877 "Recommended Practice for Bar-Coded Vehicle Identification Number Label," (October 1993), and J1892 "Recommended Practice for Bar-Coded Vehicle Emission Configuration Label," (July 1994). SAE J1877 and J1892 are incorporated by reference. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096-0001. Copies may be inspected at Docket No. A-90-35 at EPA's Air Docket (LE-131), room 1500M, 1st Floor, Waterside Mall, 401 M Street, SW., Washington, DC, or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(g) The Administrator may approve in advance other label formats provided the information contained on the label is substantively the same as that required in paragraph (c) of this section.

**§ 86.1808-01 Maintenance instructions.**

(a) The manufacturer shall furnish or cause to be furnished to the purchaser of each new motor vehicle subject to the standards prescribed in this subpart, as applicable, written instructions for the proper maintenance and use of the vehicle, by the purchaser consistent with the provisions of § 86.1834-01, which establishes what scheduled maintenance the Administrator approves as being reasonable and necessary.

(1) The maintenance instructions required by this section shall be in clear, and to the extent practicable, nontechnical language.

(2) The maintenance instructions required by this section shall contain a general description of the documentation which the manufacturer will require from the ultimate purchaser

or any subsequent purchaser as evidence of compliance with the instructions.

(b) Instructions provided to purchasers under paragraph (a) of this section shall specify the performance of all scheduled maintenance performed by the manufacturer on certification durability vehicles and, in cases where the manufacturer performs less maintenance on certification durability data vehicles than the allowed limit, may specify the performance of any scheduled maintenance allowed under § 86.1834-01.

(c) Scheduled emission-related maintenance in addition to that performed under § 86.1834-01 may only be recommended to offset the effects of abnormal in-use operating conditions, except as provided in paragraph (d) of this section. The manufacturer shall be required to demonstrate, subject to the approval of the Administrator, that such maintenance is reasonable and technologically necessary to assure the proper functioning of the emission control system. Such additional recommended maintenance shall be clearly differentiated, in a form approved by the Administrator, from that approved under § 86.1834-01.

(d) Inspections of emission-related parts or systems with instructions to replace, repair, clean, or adjust the parts or systems if necessary, are not considered to be items of scheduled maintenance which insure the proper functioning of the emission control system. Such inspections, and any recommended maintenance beyond that approved by the Administrator as reasonable and necessary under paragraphs (a), (b), and (c) of this section, may be included in the written instructions furnished to vehicle owners under paragraph (a) of this section, provided that such instructions clearly state, in a form approved by the Administrator, that the owner need not perform such inspections or recommended maintenance in order to maintain the emission warranty or manufacturer recall liability.

(e) If the vehicle has been granted an alternative useful life period under the provisions of § 86.1805-01(c), the manufacturer may choose to include in such instructions an explanation of the distinction between the alternative useful life specified on the label, and the emissions defect and emissions performance warranty period. The explanation must clearly state that the useful life period specified on the label represents the average period of use up to retirement or rebuild for the test group represented by the engine used in the vehicle. An explanation of how the

actual useful lives of engines used in various applications are expected to differ from the average useful life may be included. The explanation(s) shall be in clear, non-technical language that is understandable to the ultimate purchaser.

(f) Emission control diagnostic service information:

(1) Manufacturers shall furnish or cause to be furnished to any person engaged in the repairing or servicing of motor vehicles or motor vehicle engines, or the Administrator upon request, any and all information needed to make use of the on-board diagnostic system and such other information, including instructions for making emission-related diagnosis and repairs, including, but not limited to, service manuals, technical service bulletins, recall service information, data stream information, bi-directional control information, and training information, unless such information is protected by section 208(c) as a trade secret. No such information may be withheld under section 208(c) of the Act if that information is provided (directly or indirectly) by the manufacturer to franchised dealers or other persons engaged in the repair, diagnosing, or servicing of motor vehicles or motor vehicle engines.

(2) Emission-related information includes, but is not limited to:

(i) Information regarding any system, component or part of a vehicle that controls emissions and any system, components and/or parts associated with the powertrain system, including, but not limited to, the fuel system and ignition system;

(ii) Information for any system, component, or part that is likely to impact emissions, such as transmission systems; and

(iii) Any other information specified by the Administrator to be relevant for the diagnosis and repair of an emission failure found through the Inspection and Maintenance program, after such finding has been communicated to the affected manufacturer(s).

(3) All information required to be made available by this section shall be made available to persons referred to in this section at a fair and reasonable price, as determined by the Administrator. In reaching a decision, the Administrator shall consider all relevant factors, including, but not limited to, the cost to the manufacturer of preparing and/or providing the information, the type of information, the format in which it is provided, the price charged by other manufacturers for similar information, the differences that exist among manufacturers (e.g., the size



of the manufacturer), the quantity of material contained in a publication, the detail of the information, the cost of the information prior to August 9, 1995, volume discounts, and inflation.

(4) Any information which is not provided at a fair and reasonable price shall be considered unavailable. Manufacturers shall make the information required under this section available to persons specified in paragraph (f)(1) of this section at the same time it is made available to dealerships, except as otherwise specified in this section.

(5) Each manufacturer shall provide in a manner specified in paragraph (g)(9) of this section an index of the information required to be made available by this section for vehicles which have been offered for sale; this requirement does not apply to indirect information, including the information specified in paragraph (g)(10) of this section. This index shall:

- (i) Be updated on the first and third Monday of each month;
- (ii) Provide titles that either adequately describes the contents of the document to which it refers or provides a brief description of the information contained in that document; and
- (iii) Provide the cost of information and where it can be obtained.

(6) Manufacturers shall make the information required under this section available to persons specified in paragraph (f)(1) of this section at the same time it is made available to dealerships, except as otherwise specified in this section.

(7) Each manufacturer shall maintain the index of information specified in paragraph (f)(5) of this section on FedWorld or other database designated by the Administrator. Manufacturers shall inform persons specified in paragraph (f)(1) of this section about the availability of the index in a manner prescribed by the Administrator.

(8) Each manufacturer shall be responsible for paying its pro rata share of any costs associated with establishing and maintaining the index of emission-related service and repair information provided for in paragraphs (f)(5) and (f)(7) of this section.

(9) Manufacturers or their designated distributors must mail requested information within one business day of receiving an order, and shall provide overnight delivery if the ordering party requests it and assumes the cost of delivery.

(10) All emission-related data stream information made available to manufacturers' franchised dealerships (or others in the service industry) shall be made available to the persons

indicated in paragraph (f)(1) of this section either through provision of manufacturer equipment and tools or through provision of such information to equipment and tool manufacturers.

(11) A manufacturer shall only provide bi-directional control to its franchised dealerships if it provides equipment and tool manufacturers with information to make diagnostic equipment with the same bi-directional control capabilities available to the dealerships, or if it provides such capabilities directly to persons specified in paragraph (f)(1) of this section by offering for sale at a reasonable cost through manufacturer tools.

(12) Manufacturers shall make data stream information and bi-directional control information available as specified in paragraphs (f)(10) and (f)(11) of this section.

(13) Manufacturers shall make available to persons indicated in paragraph (f)(1) of this section in the manner described in paragraph (f)(16) of this section reprogramming capability for all emission-related reprogramming events (including driveability reprogramming events that may affect emissions) that are issued by manufacturers at the same time they are made available to dealerships.

(14) For all vehicles, reprogramming need not be provided for any recalibrations performed prior to vehicles entering the stream of commerce (i.e., sale to first purchaser).

(15) [Reserved]

(16) Manufacturers shall either offer for sale at a competitive market price a reprogramming tool that interfaces with a substantial majority of generic portable computers or make available to aftermarket tool and equipment companies information that would enable them to manufacture such a tool. Any method adopted by a manufacturer by which reprogramming is made available to persons specified in paragraph (f)(1) of this section shall not impose a significant burden on such providers beyond that experienced by dealerships.

(17) Manufacturers shall be responsible for ensuring that persons specified in paragraph (f)(1) of this section shall have access to reprogramming services at a reasonable cost and in a timely manner.

(18) Manufacturers shall provide persons specified in paragraph (f)(1) of this section with an efficient and cost-effective method for identifying whether the calibrations on vehicles are the latest to be issued.

(19) Manufacturers shall either make available to aftermarket tool and equipment companies no later than the

date of model introduction any and all information, except calibrations and recalibrations, needed to develop and manufacture generic tools that can be used by persons specified in paragraph (f)(1) of this section to diagnose, service and repair emission-related parts, components and systems or manufacturers may sell their own diagnostic tools and equipment to persons specified in paragraph (f)(1) of this section if the price of such tools is reasonable.

(20) A manufacturer is subject to a penalty of up to \$25,000 per day per violation for failure to make available the information required by this section.

#### **§ 86.1809-01 Prohibition of defeat devices.**

(a) No new light-duty vehicle or light-duty truck shall be equipped with a defeat device.

(b) The Administrator may test or require testing on any vehicle at a designated location, using driving cycles and conditions which may reasonably be expected to be encountered in normal operation and use, for the purposes of investigating a potential defeat device.

(c) For cold temperature CO emission control, the Administrator will use a guideline to determine the appropriateness of the CO emission control at ambient temperatures between 25 deg. F (– 4 deg. C) and 68 deg. F (20 deg. C). The guideline for CO emission congruity across the intermediate temperature range is the linear interpolation between the CO standard applicable at 25 deg. F (– 4 deg. C) and the CO standard applicable at 68 deg. F (20 deg. C). For vehicles that exceed this CO emissions guideline upon intermediate temperature cold testing:

(1) If the CO emission level is greater than the 20 deg. F (– 7 deg. C) emission standard, the vehicle will automatically be considered to be equipped with a defeat device without further investigation.

(2) If the CO emission level does not exceed the 20 deg. F emission standard, the Administrator may investigate the vehicle design for the presence of a defeat device under paragraph (d) of this section.

(d) For vehicle designs designated by the Administrator to be investigated for possible defeat devices:

(1) The manufacturer must show to the satisfaction of the Administrator that the vehicle design does not incorporate strategies that unnecessarily reduce emission control effectiveness exhibited during the Federal or Supplemental Federal emissions test procedures (FTP or SFTP) when the vehicle is operated



under conditions which may reasonably be expected to be encountered in normal operation and use.

(2) Information requirements:

(i) Upon request by the Administrator, the manufacturer will provide an explanation containing detailed information regarding test programs, engineering evaluations, design specifications, calibrations, on-board computer algorithms, and design strategies incorporated for operation both during and outside of the Federal emission test procedure.

(ii) For purposes of investigations of possible cold temperature CO defeat devices under this paragraph (d), the manufacturer shall provide an explanation which must show, to the satisfaction of the Administrator, that CO emissions are reasonably controlled in reference to the linear guideline, across the intermediate temperature range.

**§ 86.1810-01 General standards; increase in emissions; unsafe conditions; waivers.**

This section applies to model year 2001 and later light-duty vehicles and light-duty trucks fueled by gasoline, diesel, methanol, natural gas and liquefied petroleum gas fuels. Multi-fueled vehicles (including dual-fueled and flexible-fueled vehicles) shall comply with all requirements established for each consumed fuel (or blend of fuels in the case of flexible fueled vehicles). The standards of this subpart apply to both certification and in-use vehicles unless otherwise indicated.

(a) Any device, system or element of design installed on or incorporated in a new motor vehicle to enable such vehicle to conform to the standards imposed by this subpart:

(1) Shall not in its operation or function cause the emission into the ambient air of any noxious or toxic substance that would not be emitted in the operation of such vehicle without such system, except as specifically permitted by regulation; and

(2) Shall not in its operation, function or malfunction result in any unsafe condition endangering the vehicle, its occupants, or persons or property in close proximity to the vehicle.

(b) In establishing the physically adjustable range of each adjustable parameter on a new motor vehicle, the manufacturer shall ensure that, taking into consideration the production tolerances, safe vehicle drive ability characteristics are available within that range, as required by section 202(a)(4) of the Clean Air Act.

(c) Every manufacturer of new motor vehicles subject to any of the standards

imposed by this subpart shall, prior to taking any of the actions specified in section 203(a)(1) of the Act, test or cause to be tested motor vehicles (or motor vehicle engines) in accordance with good engineering judgment to ascertain that such test vehicles will meet the requirements of this section for the useful life of the vehicle.

(d) *Crankcase emissions prohibited.* No crankcase emissions shall be discharged into the ambient atmosphere from any 2001 and later model year light-duty vehicle or light-duty truck.

(e) *On-board diagnostics.* All light-duty vehicles and light-duty trucks must have an on-board diagnostic system as described in § 86.1806-01.

(f) *Altitude requirements.* Except for supplemental exhaust emission standards (which apply only at low altitude conditions), all emission standards apply at low altitude conditions and at high altitude conditions.

(g) The standards set forth in this part refer to test procedures set forth in subparts B, C, O and P of this part.

(h) For methanol-fueled and natural gas-fueled vehicles, hydrocarbon standards refer to hydrocarbon equivalents and nonmethane hydrocarbon standards refer to nonmethane hydrocarbon equivalents.

(i) *Supplemental FTP general provisions.* (1) Implementation schedules. A minimum of the percentage of a manufacturer's model year sales of light-duty vehicles or light-duty trucks (considered independently) shown in Table S01-1 and heavy light-duty trucks shown in Table S01-2 shall not exceed the applicable SFTP standards found in paragraph (b) of §§ 86.1811-01, 1812-01, 1813-01, 1814-02, and 1815-02 when tested under the applicable procedures in subpart B of this part. Tables S01-1 and S01-2 follow:

TABLE S01-1.—SFTP IMPLEMENTATION SCHEDULE FOR LIGHT-DUTY VEHICLES AND LIGHT LIGHT-DUTY TRUCKS

Model year	Percentage
2000 .....	40
2001 .....	80
2002 .....	100

TABLE S01-2.—SFTP IMPLEMENTATION SCHEDULE FOR HEAVY LIGHT-DUTY TRUCKS

Model year	Percentage
2002 .....	40
2003 .....	80

TABLE S01-2.—SFTP IMPLEMENTATION SCHEDULE FOR HEAVY LIGHT-DUTY TRUCKS—Continued

Model year	Percentage
2004 .....	100

(2) Optionally, a minimum of the percentage shown in Table S01-1 of a manufacturer's combined sales of the applicable model year's light-duty vehicles and light light-duty trucks shall not exceed the applicable SFTP standards. Under this option, the light-duty vehicles shall not exceed the applicable SFTP standards in § 86.1811-01(b), and the light light-duty trucks shall not exceed the applicable SFTP standards in § 86.1812-01(b) or § 86.1813-01(b) as applicable.

(3) Sales percentages for the purposes of determining compliance with the applicable SFTP emission standards shall be based on total actual U.S. sales of light-duty vehicles of the applicable model year by a manufacturer to a dealer, distributor, fleet operator, broker, or any other entity which comprises the point of first sale. If the option of paragraph (i)(2) of this section is taken, such sales percentages shall be based on the total actual combined U.S. sales of light-duty vehicles and light light-duty trucks of the applicable model year by a manufacturer to a dealer, distributor, fleet operator, broker, or any other entity which comprises the point of first sale.

(4) The SFTP standards do not apply to vehicles or trucks certified on alternative fuels, but the standards do apply to the gasoline and diesel fuel operation of flexible fuel vehicles and trucks and dual fuel vehicles and trucks.

(5) The SFTP standards do not apply to vehicles or trucks tested at high altitude.

(6) The air to fuel ratio shall not be richer at any time than the leanest air to fuel mixture required to obtain maximum torque (lean best torque), plus a tolerance of six percent. The Administrator may approve a manufacturer's request for additional enrichment if it can be shown that additional enrichment is needed to protect the engine or emissions control hardware.

(7) The requirement to use a single roll dynamometer (or a dynamometer which produces equivalent results), discussed in §§ 86.108-00, 86.118-00, and 86.129-00 of subpart B of this part, applies to all SFTP and FTP test elements as set forth in subpart B of this part for test groups which are designated as SFTP compliant under the implementation schedules in Tables

S01-1 and S01-2 in paragraph (i)(1) of this section.

(8) Small volume provisions. (i) Light-duty vehicles and light light-duty trucks manufactured by small volume manufacturers, as described in § 86.1801-01(d), are exempt from the requirements of this paragraph until model year 2002, when 100 percent compliance with the provisions of this paragraph (i) and the SFTP standards in § 86.1811-01(b) and § 86.1812-01(b) is required. This exemption does not apply to small volume test groups as defined in § 86.1838-01(b)(2).

(ii) Heavy light-duty trucks manufactured by small volume manufacturers, as defined in § 86.1801-01, are exempt from the requirements of this paragraph (i) until model year 2004 when 100 percent compliance with the provisions of this paragraph and the SFTP standards in §§ 86.1814-02(b) and 86.1815-02(b) is required. This exemption does not apply to small volume test groups as defined in § 86.1838-01(b)(2).

(9) [Reserved]

(10) The manufacturer must state at the time of Application for Certification, based on projected U.S. sales or projected production for U.S. sale, which test groups will be used to attain the required implementation schedule sales percentages for certification purposes.

(11) A manufacturer cannot use one set of test groups to meet its intermediate useful life standards and another to meet its full useful life standards. The same test groups which are used to meet the intermediate useful life standards will be required to meet the corresponding full useful life standards.

(12) Compliance with composite standards shall be demonstrated using the calculations set forth in § 86.164-00.

(j) *Evaporative emissions general provisions.* (1) The evaporative standards in §§ 86.1811-01(d), 86.1812-01(d), 86.1813-01(d), 86.1814-01(d) and 86.1815-01(d) apply equally to certification and in-use vehicles and trucks. The spitback standard also applies to newly assembled vehicles.

(2) For certification testing only, manufacturers may conduct testing to quantify a level of non-fuel background emissions for an individual test vehicle. Such a demonstration must include a description of the source(s) of emissions and an estimated decay rate. The demonstrated level of non-fuel background emissions may be subtracted from evaporative emission test results from certification vehicles if approved in advance by the Administrator.

(3) All fuel vapor generated in a gasoline- or methanol-fueled light-duty vehicle or light-duty truck during in-use operation shall be routed exclusively to the evaporative control system (e.g., either canister or engine purge.) The only exception to this requirement shall be for emergencies.

(k) *Refueling emissions general provisions.* (1) Implementation schedules. (i) Tables S01-3, S01-4, and S01-5 in this paragraph (k)(1)(i) give the minimum percentage of a manufacturer's sales of the applicable model year's gasoline- and methanol-fueled Otto-cycle and petroleum-fueled and methanol-fueled diesel-cycle light-duty vehicles and light-duty trucks which shall be tested under the applicable procedures in subpart B of this part, and shall not exceed the standards described in §§ 86.1811-01(e), 86.1812-01(e), 86.1813-01(e), 86.1814-01(e). Vehicles waived from the emission standards under the provisions of paragraphs (m) and (n) of this section shall not be counted in the calculation of the percentage of compliance. Tables S01-3, S01-4, and S01-5 follow:

TABLE S01-3—LIGHT-DUTY VEHICLES

Model year	Percentage
1998 <sup>a</sup> .....	40
1999 <sup>a</sup> .....	80
2000 <sup>a</sup> .....	100

<sup>a</sup> **Note:** This subpart prescribes standards for 2001 and later MY vehicles. However, the implementation phase-in periods prior to this date are included for ease of reference.

TABLE S01-4—LIGHT LIGHT-DUTY TRUCKS

Model year	Percentage
2001 .....	40
2002 .....	80
2003 .....	100

TABLE S01-5—HEAVY LIGHT-DUTY TRUCKS

Model year	Percentage
2004 .....	40
2005 .....	80
2006 .....	100

(ii) Either manufacturer sales or actual production intended for sale in the United States may be used to determine combined volume, at the manufacturers option.

(2) Sales percentages for the purposes of determining compliance with the applicable refueling emission standards shall be based on total actual U.S. sales of light-duty vehicles or light-duty

trucks of the applicable model year by a manufacturer to a dealer, distributor, fleet operator, broker, or any other entity which comprises the point of first sale.

(3) Refueling receptacle requirements. Refueling receptacles on natural gas-fueled vehicles shall comply with the receptacle provisions of the ANSI/AGA NGV1-1994 standard (as incorporated by reference in § 86.1(b)(3)). This requirement is subject to the phase-in schedules in Tables S01-3 and S01-4 of paragraph (k)(1)(i) of this section.

(l) Fuel dispensing spitback testing waiver. (1) Vehicles certified to the refueling emission standards set forth in §§ 86.1811-01(e), 86.1812-01(e) and 86.1813-01(e) are not required to demonstrate compliance with the fuel dispensing spitback standard contained in that section provided that:

(i) The manufacturer certifies that the vehicle inherently meets the fuel dispensing spitback standard as part of compliance with the refueling emission standard; and

(ii) This certification is provided in writing and applies to the full useful life of the vehicle.

(2) EPA retains the authority to require testing to enforce compliance and to prevent noncompliance with the fuel dispensing spitback standard.

(m) Inherently low refueling emission testing waiver. (1) Vehicles using fuels/fuel systems inherently low in refueling emissions are not required to conduct testing to demonstrate compliance with the refueling emission standards set forth in §§ 86.1811-01(e), 86.1812-01(e) and 86.1813-01(e) provided that:

(i) This provision is only available for petroleum diesel fuel. It is only available if the Reid Vapor Pressure of in-use diesel fuel is equal to or less than 1 psi (7 kPa) and for diesel vehicles whose fuel tank temperatures do not exceed 130 deg.F (54 deg. C); and

(ii) To certify using this provision the manufacturer must attest to the following evaluation: "Due to the low vapor pressure of diesel fuel and the vehicle tank temperatures, hydrocarbon vapor concentrations are low and the vehicle meets the 0.20 grams/gallon refueling emission standard without a control system."

(2) The certification required in paragraph (m)(1)(ii) of this section must be provided in writing and must apply for the full useful life of the vehicle.

(3) EPA reserves the authority to require testing to enforce compliance and to prevent noncompliance with the refueling emission standard.

(n) Fixed liquid level gauge waiver. Liquefied petroleum gas-fueled vehicles which contain fixed liquid level gauges or other gauges or valves which can be

opened to release fuel or fuel vapor during refueling, and which are being tested for refueling emissions, are not required to be tested with such gauges or valves open, as outlined in § 86.157-98(d)(2), provided the manufacturer can demonstrate, to the satisfaction of the Administrator, that such gauges or valves would not be opened during refueling in-use due to inaccessibility or other design features that would prevent or make it very unlikely that such gauges or valves could be opened.

**§ 86.1811-01 Emission standards for light-duty vehicles.**

This section applies to 2001 and later model year light-duty vehicles fueled by gasoline, diesel, methanol, natural gas and liquefied petroleum gas fuels except as noted. Multi-fueled vehicles shall comply with all requirements established for each consumed fuel. For methanol fueled vehicles, references in this section to total hydrocarbons shall mean total hydrocarbon equivalents and references to non-methane hydrocarbons shall mean non-methane hydrocarbon equivalents.

(a) *Exhaust emission standards.* (1) Exhaust emissions shall not exceed the following standards at intermediate useful life:

(i) Total hydrocarbons: 0.41 grams per mile, except natural gas, which has no standard.

(ii) Non-methane hydrocarbons: 0.25 grams per mile.

(iii) Carbon monoxide: 3.4 grams per mile.

(iv) Oxides of nitrogen: 0.4 grams per mile except diesel fuel which has a 1.0 gram per mile standard.

(v) Particulate matter: 0.08 grams per mile.

(2) Exhaust emissions shall not exceed the following standards at full useful life:

(i) [Reserved]

(ii) Non-methane hydrocarbons: 0.31 grams per mile.

(iii) Carbon monoxide: 4.2 grams per mile.

(iv) Oxides of nitrogen: 0.6 grams per mile except diesel fuel which has a 1.25 gram per mile standard.

(v) Particulate matter: 0.10 grams per mile.

(b) *Supplemental exhaust emission standards.* (1) Supplemental exhaust emissions from gasoline-fueled and diesel-fueled light-duty vehicles shall not exceed the following standards at intermediate useful life:

(i) Nonmethane hydrocarbon and oxides of nitrogen composite: 0.65 grams per mile except diesel fuel which has a 1.48 gram per mile standard.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 3.0 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 9.0 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 3.4 grams per mile.

(2) Supplemental exhaust emissions from gasoline-fueled and diesel-fueled light-duty vehicles shall not exceed the following standards at full useful life:

(i) Nonmethane hydrocarbon and oxides of nitrogen composite: 0.91 grams per mile except diesel-fueled which have a 2.07 gram per mile standard.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 3.7 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 11.1 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 4.2 grams per mile.

(c) *Cold temperature emission standards.* Exhaust emissions from gasoline-fueled light-duty vehicles shall not exceed the cold temperature CO standard of 10.0 grams carbon monoxide per mile for an intermediate useful life of 50,000 miles.

(d) *Evaporative emission standards.* Evaporative emissions from gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled, and methanol-fueled light-duty vehicles shall not exceed the following standards. The standards apply equally to certification and in-use vehicles. The spitback standard also applies to newly assembled vehicles.

(1) Hydrocarbons.

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.0 grams per test.

(ii) *Gasoline and methanol-fueled only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(iii) *Gasoline and methanol-fueled only.* For the running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol-fueled only.* For the fuel dispensing spitback test: 1.0 gram hydrocarbon (carbon for methanol-fueled) per test.

(2) [Reserved]

(e) *Refueling emissions.* Refueling emissions from 2001 and later model

year light-duty vehicles shall not exceed the following standards:

(1) For gasoline-fueled, diesel fueled, and methanol-fueled vehicles: 0.20 grams hydrocarbon per gallon (0.053 gram per liter) of fuel dispensed.

(2) For liquefied petroleum gas-fueled vehicles: 0.15 grams hydrocarbon per gallon (0.04 gram per liter) of fuel dispensed.

(f) *Certification short test.*

Certification short test emissions from gasoline-fueled Otto-cycle light-duty vehicles shall not exceed the following standards:

(1) Hydrocarbons: 100 ppm as hexane.

(2) Carbon monoxide: 0.5%.

**§ 86.1812-01 Emission standards for light-duty trucks 1.**

This section applies to 2001 and later model year light-duty truck 1's fueled by gasoline, diesel, methanol, natural gas and liquefied petroleum gas fuels except as noted. Multi-fueled vehicles shall comply with all requirements established for each consumed fuel. For methanol fueled vehicles, references in this section to total hydrocarbons shall mean total hydrocarbon equivalents and references to non-methane hydrocarbons shall mean non-methane hydrocarbon equivalents.

(a) *Exhaust emission standards.* (1) Exhaust emissions shall not exceed the following standards at intermediate useful life:

(i) [Reserved]

(ii) Non-methane hydrocarbons: 0.25 grams per mile.

(iii) Carbon monoxide: 3.4 grams per mile.

(iv) Oxides of nitrogen: 0.4 grams per mile except diesel fuel which have a 1.0 gram per mile standard.

(v) Particulate matter: 0.08 grams per mile.

(2) Exhaust emissions from 2001 and later model year light-duty truck 1's shall not exceed the following standards at full useful life:

(i) Total hydrocarbons: 0.80 grams per mile, except natural gas, which has no standard. For purposes of this section, the full useful life total hydrocarbon standard is for 11 years or 120,000 miles whichever occurs first.

(ii) Non-methane hydrocarbons: 0.31 grams per mile.

(iii) Carbon monoxide: 4.2 grams per mile.

(iv) Oxides of nitrogen: 0.6 grams per mile except diesel fuel which have a 1.25 gram per mile standard.

(v) Particulate matter: 0.10 grams per mile.

(b) *Supplemental exhaust emission standards.* (1) Supplemental exhaust emissions from gasoline-fueled and

diesel-fueled light-duty truck 1's shall not exceed the following standards at intermediate useful life:

(i) Nonmethane hydrocarbon and oxides of nitrogen composite: 0.65 grams per mile except diesel fuel which have a 1.48 gram per mile standard.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 3.0 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 9.0 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 3.4 grams per mile.

(2) Supplemental exhaust emissions from gasoline-fueled and diesel-fueled light-duty vehicles shall not exceed the following standards at full useful life:

(i) Nonmethane hydrocarbon and oxides of nitrogen composite: 0.91 grams per mile except diesel fuel which have a 2.07 gram per mile standard.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 3.7 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 11.1 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 4.2 grams per mile.

(c) *Cold temperature emission standards.* Exhaust emissions from gasoline-fueled light-duty truck 1's with a loaded vehicle weight of 3,750 lbs or less shall not exceed the cold temperature CO standard of 10.0 grams carbon monoxide per mile for an intermediate useful life of 50,000 miles.

(d) *Evaporative emissions.* Evaporative emissions from gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled, and methanol-fueled light-duty truck 1's shall not exceed the following standards. The standards apply equally to certification and in-use vehicles. The spitback standard also applies to newly assembled vehicles.

(1) Hydrocarbons.

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.0 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(2) [Reserved]

(e) Refueling emissions. Refueling emissions from light-duty truck 1's shall be phased in, in accordance with the schedule in table S01-4 of § 86.1810-01 not to exceed the following emission standards:

(1) For gasoline-fueled, diesel-fueled and methanol-fueled vehicles: 0.20 grams hydrocarbon per gallon (0.053 gram per liter) of fuel dispensed.

(2) For liquefied petroleum gas-fueled vehicles: 0.15 grams hydrocarbon per gallon (0.04 gram per liter) of fuel dispensed.

(f) *Certification short test.*

Certification short test emissions from gasoline-fueled Otto-cycle light-duty trucks shall not exceed the following standards:

(1) Hydrocarbons: 100 ppm as hexane.

(2) Carbon monoxide: 0.5%.

(g) *Idle exhaust emission standards.*

Exhaust emissions of carbon monoxide from gasoline, methanol, natural gas- and liquefied petroleum gas-fueled light-duty trucks shall not exceed 0.50 percent of exhaust gas flow at curb idle for a useful life of 11 years or 120,000 miles, whichever first occurs.

#### § 86.1813-01 Emission standards for light-duty trucks 2.

This section applies to 2001 and later model year light-duty truck 2's fueled by gasoline, diesel, methanol, natural gas and liquefied petroleum gas fuels except as noted. Multi-fueled vehicles shall comply with all requirements established for each consumed fuel. For methanol fueled vehicles, references in this section to total hydrocarbons shall mean total hydrocarbon equivalents and references to non-methane hydrocarbons shall mean non-methane hydrocarbon equivalents.

(a) *Exhaust emissions.* (1) Exhaust emissions shall not exceed the following standards at intermediate useful life:

(i) [Reserved].

(ii) Non-methane hydrocarbons: 0.32 grams per mile.

(iii) Carbon monoxide: 4.4 grams per mile.

(iv) Oxides of nitrogen: 0.7 grams per mile except diesel fueled vehicles which have no standard.

(v) Particulate matter: 0.08 grams per mile.

(2) Exhaust emissions shall not exceed the following standards at full useful life:

(i) Total hydrocarbons: 0.80 grams per mile, except natural gas, which has no standard. For purposes of this section, the full useful life total hydrocarbon

standard is for 11 years or 120,000 miles whichever occurs first.

(ii) Non-methane hydrocarbons: 0.40 grams per mile.

(iii) Carbon monoxide: 5.5 grams per mile.

(iv) Oxides of nitrogen: 0.97 grams per mile.

(v) Particulate matter: 0.10 grams per mile.

(b) *Supplemental exhaust emissions.*

(1) Supplemental exhaust emissions from gasoline-fueled light-duty truck 2's shall not exceed the following standards at intermediate useful life:

(i) Nonmethane hydrocarbon and oxides of nitrogen composite: 1.02 grams per mile.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 3.9 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 11.6 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 4.4 grams per mile.

(2) Supplemental exhaust emissions from gasoline-fueled light-duty truck 2's shall not exceed the following standards at full useful life:

(i) Nonmethane hydrocarbon and oxides of nitrogen composite: 1.37 grams per mile.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 4.9 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 14.6 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 5.5 grams per mile.

(c) *Cold temperature emission standards.* Exhaust emissions from gasoline-fueled light-duty truck 2's during cold temperature testing shall not exceed a cold temperature CO standard of 12.5 grams per mile for an intermediate useful life of 50,000 miles.

(d) *Evaporative emissions.*

Evaporative emissions from gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled, and methanol-fueled light-duty truck 2's shall not exceed the following standards. The standards apply equally to certification and in-use vehicles. The spitback standard also applies to newly assembled vehicles.

(1) Hydrocarbons (Total Hydrocarbon Equivalent for methanol-fueled).

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.0 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 3.0 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(2) [Reserved]

(e) *Refueling emissions.* Refueling emissions from light-duty truck 2's shall be phased in, in accordance with the schedule in table S01-4 of § 86.1810-01 not to exceed the following emission standards:

(1) For gasoline-fueled, diesel-fueled and methanol-fueled vehicles: 0.20 grams hydrocarbon per gallon (0.053 gram per liter) of fuel dispensed.

(2) For liquefied petroleum gas-fueled vehicles: 0.15 grams hydrocarbon per gallon (0.04 gram per liter) of fuel dispensed.

(f) *Certification short test.*

Certification short test emissions from gasoline-fueled Otto-cycle light-duty vehicles and light-duty trucks shall not exceed the following standards:

(1) Hydrocarbons: 100 ppm as hexane.

(2) Carbon monoxide: 0.5%.

(g) *Idle exhaust emission standards, light-duty trucks.* Exhaust emissions of carbon monoxide from 2001 and later model year gasoline, methanol, natural gas- and liquefied petroleum gas-fueled light-duty trucks shall not exceed 0.50 percent of exhaust gas flow at curb idle for a useful life of 11 years or 120,000 miles, whichever first occurs.

**§ 86.1814-01 Emission standards for light-duty trucks 3.**

This section applies to 2001 and later model year light-duty truck 3's fueled by gasoline, diesel, methanol, natural gas and liquefied petroleum gas fuels except as noted. Multi-fueled vehicles shall comply with all requirements established for each consumed fuel. For methanol fueled vehicles, references in this section to total hydrocarbons shall mean total hydrocarbon equivalents and references to non-methane hydrocarbons shall mean non-methane hydrocarbon equivalents.

(a) *Exhaust emission standards. (1) Exhaust emissions shall not exceed the following standards at intermediate useful life:*

(i) [Reserved]

(ii) Non-methane hydrocarbons: 0.32 grams per mile.

(iii) Carbon monoxide: 4.4 grams per mile.

(iv) Oxides of nitrogen: 0.7 grams per mile except diesel-fueled vehicles which have no standard.

(v) [Reserved]

(2) Exhaust emissions from 2001 and later model year light-duty truck 3's shall not exceed the following standards at full useful life:

(i) Total hydrocarbons: 0.80 grams per mile except natural gas fueled vehicles which has no total hydrocarbon standard.

(ii) Non-methane hydrocarbons: 0.46 grams per mile.

(iii) Carbon monoxide: 6.4 grams per mile.

(iv) Oxides of nitrogen: 0.98 grams per mile.

(v) Particulate matter: 0.10 grams per mile.

(b) [Reserved]

(c) *Cold temperature emission standards.* Exhaust emissions from gasoline-fueled light-duty truck 3's shall not exceed the cold temperature CO standard of 12.5 grams per mile for an intermediate useful life of 50,000 miles.

(d) *Evaporative emissions.* Evaporative emissions from gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled, and methanol-fueled light-duty truck 3's shall not exceed the following standards. The standards apply equally to certification and in-use vehicles. The spitback standard also applies to newly assembled vehicles.

(1) Hydrocarbons for gasoline and methanol light-duty trucks with a nominal fuel tank capacity of 30 gallons or more shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 3.0 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(2) Hydrocarbons for gasoline and methanol light-duty trucks with a nominal fuel tank capacity of less than 30 gallons shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.0 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(e) [Reserved]

(f) *Certification short test.*

Certification short test emissions from gasoline-fueled Otto-cycle light-duty vehicles and light-duty trucks shall not exceed the following standards:

(1) Hydrocarbons: 100 ppm as hexane.

(2) Carbon monoxide: 0.5%.

(g) *Idle exhaust emission standards.*

Exhaust emissions of carbon monoxide from 2001 and later model year gasoline, methanol, natural gas- and liquefied petroleum gas-fueled light-duty trucks shall not exceed 0.50 percent of exhaust gas flow at curb idle for a useful life of 11 years or 120,000 miles, whichever first occurs.

**§ 86.1814-02 Emission standards for light-duty trucks 3.**

This section applies to 2002 and later model year light-duty truck 3's fueled by gasoline, diesel, methanol, natural gas and liquefied petroleum gas fuels except as noted. Multi-fueled vehicles shall comply with all requirements established for each consumed fuel. For methanol fueled vehicles, references in this section to total hydrocarbons shall mean total hydrocarbon equivalents and references to non-methane hydrocarbons shall mean non-methane hydrocarbon equivalents.

(a) *Exhaust emission standards. (1) Exhaust emissions shall not exceed the following standards at intermediate useful life:*

(i) [Reserved]

(ii) Non-methane hydrocarbons: 0.32 grams per mile.

(iii) Carbon monoxide: 4.4 grams per mile.

(iv) Oxides of nitrogen: 0.7 grams per mile except diesel-fueled vehicles which have no standard.

(v) [Reserved]

(2) Exhaust emissions from 2001 and later model year light-duty truck 3's shall not exceed the following standards at full useful life:

(i) Total hydrocarbons: 0.80 grams per mile except natural gas fueled vehicles which have no total hydrocarbon standard.

(ii) Non-methane hydrocarbons: 0.46 grams per mile.

(iii) Carbon monoxide: 6.4 grams per mile.

(iv) Oxides of nitrogen: 0.98 grams per mile.

(v) Particulate matter: 0.10 grams per mile.

(b) *Supplemental exhaust emissions.*

(1) Supplemental exhaust emissions for 2002 and later model year gasoline-fueled light-duty truck 3's shall not

exceed the following standards at intermediate useful life:

(i) Non-methane hydrocarbon and oxides of nitrogen composite: 1.02 grams per mile.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 3.9 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 11.6 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 4.4 grams per mile.

(2) Supplemental exhaust emissions from 2002 and later model year gasoline-fueled light-duty truck 3's shall not exceed the following standards at full useful life:

(i) Non-methane hydrocarbon and oxides of nitrogen composite: 1.44 grams per mile.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 5.6 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 16.9 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 6.4 grams per mile.

(c) *Cold temperature emission standards.* Exhaust emissions from gasoline-fueled light-duty truck 3's shall not exceed the cold temperature CO standard of 12.5 grams per mile for an intermediate useful life of 50,000 miles.

(d) *Evaporative emissions.*

Evaporative emissions from gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled, and methanol-fueled light-duty truck 3's shall not exceed the following standards. The standards apply equally to certification and in-use vehicles. The spitback standard also applies to newly assembled vehicles.

(1) Hydrocarbons for gasoline and methanol light-duty trucks with a nominal fuel tank capacity of 30 gallons or more shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 3.0 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(2) Hydrocarbons for gasoline and methanol light-duty trucks with a nominal fuel tank capacity of less than 30 gallons shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.0 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(e) [Reserved]

(f) *Certification short test.*

Certification short test emissions from gasoline-fueled Otto-cycle light-duty vehicles and light-duty trucks shall not exceed the following standards:

(1) Hydrocarbons: 100 ppm as hexane.

(2) Carbon monoxide: 0.5%.

(g) *Idle exhaust emission standards.*

Exhaust emissions of carbon monoxide from 2001 and later model year gasoline, methanol, natural gas- and liquefied petroleum gas-fueled light-duty trucks shall not exceed 0.50 percent of exhaust gas flow at curb idle for a useful life of 11 years or 120,000 miles, whichever first occurs.

**§ 86.1814-04 Emission standards for light-duty trucks 3.**

This section applies to 2004 and later model year light-duty truck 3's fueled by gasoline, diesel, methanol, natural gas and liquefied petroleum gas fuels except as noted. Multi-fueled vehicles shall comply with all requirements established for each consumed fuel. For methanol fueled vehicles, references in this section to total hydrocarbons shall mean total hydrocarbon equivalents and references to non-methane hydrocarbons shall mean non-methane hydrocarbon equivalents.

(a) *Exhaust emission standards.* (1) Exhaust emissions shall not exceed the following standards at intermediate useful life:

(i) [Reserved]

(ii) Non-methane hydrocarbons: 0.32 grams per mile.

(iii) Carbon monoxide: 4.4 grams per mile.

(iv) Oxides of nitrogen: 0.7 grams per mile except diesel-fueled vehicles which have no standard.

(v) [Reserved]

(2) Exhaust emissions from light-duty truck 3's shall not exceed the following standards at full useful life:

(i) Total hydrocarbons: 0.80 grams per mile except natural gas fueled vehicles which have no total hydrocarbon standard.

(ii) Non-methane hydrocarbons: 0.46 grams per mile.

(iii) Carbon monoxide: 6.4 grams per mile.

(iv) Oxides of nitrogen: 0.98 grams per mile.

(v) Particulate matter: 0.10 grams per mile.

(b) *Supplemental exhaust emissions.*

(1) Supplemental exhaust emissions from gasoline-fueled light-duty truck 3's shall not exceed the following standards at intermediate useful life:

(i) Non-methane hydrocarbon and oxides of nitrogen composite: 1.02 grams per mile.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 3.9 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 11.6 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 4.4 grams per mile.

(2) Supplemental exhaust emissions from gasoline-fueled light-duty truck 3's shall not exceed the following standards at full useful life:

(i) Non-methane hydrocarbon and oxides of nitrogen composite: 1.44 grams per mile.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 5.6 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 16.9 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 6.4 grams per mile.

(c) *Cold temperature emission standards.*

Exhaust emissions from gasoline-fueled light-duty truck 3's shall not exceed the cold temperature CO standard of 12.5 grams per mile for an intermediate useful life of 50,000 miles.

(d) *Evaporative emissions.*

Evaporative emissions from gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled, and methanol-fueled light-duty truck 3's shall not exceed the following standards. The standards apply equally to certification and in-use vehicles. The spitback standard also applies to newly assembled vehicles.

(1) Hydrocarbons for gasoline and methanol light-duty trucks with a nominal fuel tank capacity of 30 gallons or more shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 3.0 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(2) Hydrocarbons for gasoline and methanol light-duty trucks with a nominal fuel tank capacity of less than 30 gallons shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.0 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(e) *Refueling emissions.* (1) Refueling emissions from light-duty truck 3's shall be phased in, in accordance with the schedule in table S01-5 of § 86.1810-01 not to exceed the following emission standards:

(i) For gasoline-fueled, diesel-fueled and methanol-fueled vehicles: 0.20 grams hydrocarbon per gallon (0.053 gram per liter) of fuel dispensed.

(ii) For liquefied petroleum gas-fueled vehicles: 0.15 grams hydrocarbon per gallon (0.04 gram per liter) of fuel dispensed.

(f) *Certification short test.*

Certification short test emissions from gasoline-fueled Otto-cycle light-duty vehicles and light-duty trucks shall not exceed the following standards:

(1) Hydrocarbons: 100 ppm as hexane.

(2) Carbon monoxide: 0.5%.

(g) *Idle exhaust emission standards.* Exhaust emissions of carbon monoxide from gasoline, methanol, natural gas- and liquefied petroleum gas-fueled light-duty trucks shall not exceed 0.50 percent of exhaust gas flow at curb idle for a useful life of 11 years or 120,000 miles, whichever first occurs.

#### § 86.1815-01 Emission standards for light-duty trucks 4.

This section applies to 2001 and later model year light-duty truck 4's fueled by gasoline, diesel, methanol, natural

gas and liquefied petroleum gas fuels except as noted. Multi-fueled vehicles shall comply with all requirements established for each consumed fuel. For methanol fueled vehicles, references in this section to total hydrocarbons shall mean total hydrocarbon equivalents and references to non-methane hydrocarbons shall mean non-methane hydrocarbon equivalents.

(a) *Exhaust emission standards.* (1) Exhaust emissions from light-duty truck 4's shall not exceed the following standards at intermediate useful life:

(i) [Reserved]

(ii) Non-methane hydrocarbons: 0.39 grams per mile.

(iii) Carbon monoxide: 5.0 grams per mile.

(iv) Oxides of nitrogen: 1.1 grams per mile except diesel fueled vehicles which have no standard.

(v) [Reserved]

(2) Exhaust emissions shall not exceed the following standards at full useful life:

(i) Total hydrocarbons: 0.80 grams per mile except natural gas fuel which has no total hydrocarbon standard.

(ii) Non-methane hydrocarbons: 0.56 grams per mile.

(iii) Carbon monoxide: 7.3 grams per mile.

(iv) Oxides of nitrogen: 1.53 grams per mile.

(v) Particulate matter: 0.12 grams per mile.

(b) [Reserved]

(c) *Cold temperature emission standards.* Exhaust emissions from gasoline-fueled light-duty truck 4's shall not exceed the cold temperature CO standard of 12.5 grams per mile for an intermediate useful life of 50,000 miles.

(d) *Evaporative emissions.* Evaporative emissions from gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled, and methanol-fueled light-duty truck 4's shall not exceed the following standards. The standards apply equally to certification and in-use vehicles. The spitback standard also applies to newly assembled vehicles.

(1) Hydrocarbons for gasoline and methanol light-duty trucks with a nominal fuel tank capacity of 30 gallons or more shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 3.0 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(2) Hydrocarbons for gasoline and methanol light-duty trucks with a nominal fuel tank capacity of less than 30 gallons shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.0 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(e) [Reserved]

(f) *Certification short test.*

Certification short test emissions from gasoline-fueled Otto-cycle light-duty vehicles and light-duty trucks shall not exceed the following standards:

(1) Hydrocarbons: 100 ppm as hexane.

(2) Carbon monoxide: 0.5%.

(g) *Idle exhaust emission standards, light-duty trucks.* Exhaust emissions of carbon monoxide from gasoline, methanol, natural gas- and liquefied petroleum gas-fueled light-duty trucks shall not exceed 0.50 percent of exhaust gas flow at curb idle for a useful life of 11 years or 120,000 miles, whichever occurs first.

#### § 86.1815-02 Emission standards for light-duty trucks 4.

This section applies to 2002 and later model year light-duty truck 4's fueled by gasoline, diesel, methanol, natural gas and liquefied petroleum gas fuels except as noted. Multi-fueled vehicles shall comply with all requirements established for each consumed fuel. For methanol fueled vehicles, references in this section to total hydrocarbons shall mean total hydrocarbon equivalents and references to non-methane hydrocarbons shall mean non-methane hydrocarbon equivalents.

(a) *Exhaust emission standards.* (1) Exhaust emissions from light-duty truck 4's shall not exceed the following standards at intermediate useful life:

(i) [Reserved]

(ii) Non-methane hydrocarbons: 0.39 grams per mile.

(iii) Carbon monoxide: 5.0 grams per mile.

(iv) Oxides of nitrogen: 1.1 grams per mile except diesel fueled vehicles which have no standard.

(v) [Reserved]

(2) Exhaust emissions shall not exceed the following standards at full useful life:



(i) Total hydrocarbons: 0.80 grams per mile except natural gas fuel which has no total hydrocarbon standard.

(ii) Non-methane hydrocarbons: 0.56 grams per mile.

(iii) Carbon monoxide: 7.3 grams per mile.

(iv) Oxides of nitrogen: 1.53 grams per mile.

(v) Particulate matter: 0.12 grams per mile.

(b) *Supplemental exhaust emissions.*

(1) Supplemental exhaust emissions from gasoline-fueled light-duty truck 4's shall not exceed the following standards at intermediate useful life:

(i) Non-methane hydrocarbon and oxides of nitrogen composite: 1.49 grams per mile.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 4.4 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 13.2 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 5.0 grams per mile.

(2) Supplemental exhaust emissions from gasoline-fueled light-duty truck 4's shall not exceed the following standards at full useful life:

(i) Nonmethane hydrocarbon and oxides of nitrogen composite: 2.09 grams per mile.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 6.4 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 19.3 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 7.3 grams per mile.

(c) *Cold temperature emission standards.* Exhaust emissions from gasoline-fueled light-duty truck 4's shall not exceed the cold temperature CO standard of 12.5 grams per mile for an intermediate useful life of 50,000 miles.

(d) *Evaporative emissions.*

Evaporative emissions from gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled, and methanol-fueled light-duty truck 4's shall not exceed the following standards. The standards apply equally to certification and in-use vehicles. The spitback standard also applies to newly assembled vehicles.

(1) Hydrocarbons for gasoline and methanol light-duty trucks with a

nominal fuel tank capacity of 30 gallons or more shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(ii) *Gasoline and methanol fuel only.*

For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 3.0 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(2) Hydrocarbons for gasoline and methanol light-duty trucks with a nominal fuel tank capacity of less than 30 gallons shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.0 grams per test.

(ii) *Gasoline and methanol fuel only.*

For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(e) [Reserved]

(f) *Certification short test.*

Certification short test emissions from gasoline-fueled Otto-cycle light-duty vehicles and light-duty trucks shall not exceed the following standards:

(1) Hydrocarbons: 100 ppm as hexane.

(2) Carbon monoxide: 0.5%.

(g) *Idle exhaust emission standards, light-duty trucks.* Exhaust emissions of carbon monoxide from gasoline, methanol, natural gas- and liquefied petroleum gas-fueled light-duty trucks shall not exceed 0.50 percent of exhaust gas flow at curb idle for a useful life of 11 years or 120,000 miles, whichever occurs first.

#### **§ 86.1815-04 Emission standards for light-duty trucks 4.**

This section applies to 2004 and later model year light-duty truck 4's fueled by gasoline, diesel, methanol, natural gas and liquefied petroleum gas fuels except as noted. Multi-fueled vehicles shall comply with all requirements established for each consumed fuel. For methanol fueled vehicles, references in this section to total hydrocarbons shall mean total hydrocarbon equivalents and references to non-methane hydrocarbons shall mean non-methane hydrocarbon equivalents.

(a) *Exhaust emission standards.* (1) Exhaust emissions light-duty truck 4's shall not exceed the following standards at intermediate useful life:

(i) [Reserved]

(ii) Non-methane hydrocarbons: 0.39 grams per mile.

(iii) Carbon monoxide: 5.0 grams per mile.

(iv) Oxides of nitrogen: 1.1 grams per mile except diesel fueled vehicles which have no standard.

(v) [Reserved]

(2) Exhaust emissions shall not exceed the following standards at full useful life:

(i) Total hydrocarbons: 0.80 grams per mile except natural gas fuel which has no total hydrocarbon standard.

(ii) Non-methane hydrocarbons: 0.56 grams per mile.

(iii) Carbon monoxide: 7.3 grams per mile.

(iv) Oxides of nitrogen: 1.53 grams per mile.

(v) Particulate matter: 0.12 grams per mile.

(b) *Supplemental exhaust emissions.*

(1) Supplemental exhaust emissions from light-duty truck 4's shall not exceed the following standards at intermediate useful life:

(i) Non-methane hydrocarbon and oxides of nitrogen composite: 1.49 grams per mile.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 4.4 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 13.2 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 5.0 grams per mile.

(2) Supplemental exhaust emissions from gasoline-fueled light-duty truck 4's shall not exceed the following standards at full useful life:

(i) Non-methane hydrocarbon and oxides of nitrogen composite: 2.09 grams per mile.

(ii) Carbon monoxide. Regulated vehicles shall meet at least one of the following two sets of standards:

(A) *Individual US06 and SC03 Air Conditioning compliance.* Comply with both the following standards:

(1) 6.4 grams per mile on the A/C test, not applicable to diesel fueled vehicles; and

(2) 19.3 grams per mile on the US06 test; or

(B) *Composite Carbon Monoxide Standard:* 7.3 grams per mile.

(c) *Cold temperature emission standards.* Exhaust emissions from gasoline-fueled light-duty truck 4's shall not exceed the cold temperature CO standard of 12.5 grams per mile for an intermediate useful life of 50,000 miles.



(d) *Evaporative emissions.* Evaporative emissions from gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled, and methanol-fueled light-duty truck 4's shall not exceed the following standards. The standards apply equally to certification and in-use vehicles. The spitback standard also applies to newly assembled vehicles.

(1) Hydrocarbons for gasoline and methanol light-duty trucks with a nominal fuel tank capacity of 30 gallons or more shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 3.0 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(2) Hydrocarbons for gasoline and methanol light-duty trucks with a nominal fuel tank capacity of less than 30 gallons shall not exceed the following standards:

(i) For the full three-diurnal test sequence, diurnal plus hot soak measurements: 2.0 grams per test.

(ii) *Gasoline and methanol fuel only.* For the supplemental two-diurnal test sequence, diurnal plus hot soak measurements: 2.5 grams per test.

(iii) *Gasoline and methanol fuel only.* Running loss test: 0.05 grams per mile.

(iv) *Gasoline and methanol fuel only.* Fuel dispensing spitback test: 1.0 grams per test.

(e) *Refueling emissions.* (1) Refueling emissions from light-duty truck 4's shall be phased in, in accordance with the schedule in table S01-5 of § 1810-01 not to exceed the following emission standards:

(i) For gasoline-fueled, diesel-fueled and methanol-fueled vehicles: 0.20 grams hydrocarbon per gallon (0.053 gram per liter) of fuel dispensed.

(ii) For liquefied petroleum gas-fueled vehicles: 0.15 grams hydrocarbon per gallon (0.04 gram per liter) of fuel dispensed.

(f) *Certification short test.*

Certification short test emissions from gasoline-fueled Otto-cycle light-duty vehicles and light-duty trucks shall not exceed the following standards:

(1) Hydrocarbons: 100 ppm as hexane.

(2) Carbon monoxide: 0.5%.

(g) *Idle exhaust emission standards, light-duty trucks.* Exhaust emissions of carbon monoxide from gasoline, methanol, natural gas- and liquefied

petroleum gas-fueled light-duty trucks shall not exceed 0.50 percent of exhaust gas flow at curb idle for a useful life of 11 years or 120,000 miles, whichever occurs first.

§§ 86.1816 through 86.1819 [Reserved].

**§ 86.1820-01 Durability group determination.**

This section applies to the grouping of vehicles into durability groups. Manufacturers shall divide their product line into durability groups based on the following criteria:

(a) The vehicles covered by a certification application shall be divided into groups of vehicles which are expected to have similar emission deterioration and emission component durability characteristics throughout their useful life. Manufacturers shall use good engineering judgment in dividing their vehicles into durability groups. Such groups of vehicles are defined as durability groups.

(b) To be included in the same durability group, vehicles must be identical in all the respects listed in paragraphs (b) (1) through (7) of this section:

(1) Combustion cycle (e.g., two stroke, four stroke, Otto cycle, diesel cycle).

(2) Engine type (e.g., piston, rotary, turbine, air cooled versus water cooled).

(3) Fuel used (e.g., gasoline, diesel, methanol, ethanol, CNG, LPG, flexible fuels).

(4) Basic fuel metering system (e.g., throttle body injection, port injection (including central port injection), carburetor, CNG mixer unit).

(5) Catalyst construction (for example, beads or monolith).

(6) Precious metal composition of the catalyst by the type of principal active material(s) used (e.g., platinum based oxidation catalyst, palladium based oxidation catalyst, platinum and rhodium three-way catalyst, palladium and rhodium three way catalyst, platinum and palladium and rhodium three way catalyst).

(7) The manufacturer must choose one of the following two criteria:

(i) Grouping statistic:

(A) Vehicles are grouped based upon the value of the grouping statistic determined using the following equation:

$$GS = [(Cat Vol)/(Disp)] \times Loading Rate$$

Where:

GS = Grouping Statistic used to evaluate the range of precious metal loading rates and relative sizing of the catalysts compared to the engine displacement that are allowable within a durability group. The grouping statistic shall be rounded

to a tenth of a gram/liter, in accordance with the Rounding-Off Method specified in ASTM E29-93a, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference, see § 86.1).

Cat Vol = Total volume of the catalyst(s) in liters.

Disp = Displacement of the engine in liters.

Loading rate = The mass of total precious metal(s) in the catalyst (or the total mass of all precious metal(s) of all the catalysts if the vehicle is equipped with multiple catalysts) in grams divided by the total volume of the catalyst(s) in liters.

(B) Engine-emission control system combinations which have a grouping statistic which is either less than 25 percent of the largest grouping statistic value, or less than 0.2 g/liter (whichever allows the greater coverage of the durability group) shall be grouped into the same durability group.

(ii) The manufacturer may elect to use another procedure which results in at least as many durability groups as required using criteria in paragraph (b)(7)(i) of this section providing that only vehicles with similar emission deterioration or durability are combined into a single durability group.

(c) Where vehicles are of a type which cannot be divided into durability groups based on the criteria listed above (such as non-catalyst control system approaches), the Administrator will establish durability groups for those vehicles based upon the features most related to their exhaust emission deterioration characteristics.

(d) Manufacturers may further divide groups determined under paragraph (b) of this section provided the Administrator is notified of any such changes prior to or concurrently with the submission of the application for certification (preferably at an annual preview meeting scheduled before the manufacturer begins certification activities for the model year).

(e) Manufacturers may request the Administrator's approval to combine vehicles into a single durability group which would normally not be eligible to be in a single durability group. The petition should provide:

(1) Substantial evidence that all the vehicles in the larger grouping will have the same degree of emission deterioration;

(2) Evidence of equivalent component durability over the vehicle's useful life; and

(3) Evidence that the groups will result in sufficient In-Use Verification Program data, appropriate tracking in use, and clear liability for the Agency's recall program.

**§ 86.1821-01 Evaporative/refueling family determination.**

(a) The gasoline-, methanol-, liquefied petroleum gas-, and natural gas-fueled light-duty vehicles and light-duty trucks described in a certification application will be divided into groupings which are expected to have similar evaporative and/or refueling emission characteristics (as applicable) throughout their useful life. Each group of vehicles with similar evaporative and/or refueling emission characteristics shall be defined as a separate evaporative/refueling family. Manufacturers shall use good engineering judgment to determine evaporative/refueling families.

(b) For gasoline-fueled or methanol-fueled light-duty vehicles and light-duty trucks to be classed in the same evaporative/refueling family, vehicles must be similar with respect to the items listed in paragraphs (b) (1) through (9) of this section.

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

(2) Basic canister design.

(i) Working capacity—grams adsorption within a 10 g. range.

(ii) System configuration—number of canisters and method of connection (i.e., series, parallel).

(iii) Canister geometry, construction and materials.

(3) Fuel system.

(4) Type of refueling emission control system—non-integrated or integrated with the evaporative control system. Further, if the system is non-integrated, whether or not any other evaporative emissions, e.g. diurnal or hot soak emissions, are captured in the same storage device as the refueling emissions.

(5) Fillpipe seal mechanism—mechanical, liquid trap, other.

(6) Vapor control system or method of controlling vapor flow through the vapor line to the canister (for example, type of valve, vapor control strategy).

(7) Purge control system (for example, type of valve, purge control strategy).

(8) Vapor hose material.

(9) Fuel tank material.

(c) Where vehicles are of a type which cannot be divided into evaporative/refueling families based on the criteria listed above (such as non-canister control system approaches), the Administrator will establish families for those vehicles based upon the features most related to their evaporative and/or refueling emission characteristics.

(d) Manufacturers may further divide families determined under paragraph (b) of this section provided the Administrator is notified of any such changes prior to or concurrently with the submission of the application for certification (preferably at an annual preview meeting scheduled before the manufacturer begins certification activities for the model year).

(e) Manufacturers may petition the Administrator to combine vehicles into a single evaporative/refueling family which would normally not be eligible to be in a single evaporative/refueling family. The petition should provide:

(1) Substantial evidence that all the vehicles in the larger grouping will have the same degree of evaporative emission deterioration;

(2) Evidence of equivalent component durability over the vehicle's useful life; and

(3) Evidence that the groups will result in sufficient In-Use Verification Program data, appropriate tracking in use, and clear liability for the Agency's recall program.

**§ 86.1822-01 Durability data vehicle selection.**

(a) Within each durability group, the vehicle configuration which is expected to generate the highest level of exhaust emission deterioration on candidate vehicles in use, considering all constituents, shall be selected as the durability data vehicle configuration. The manufacturer will use good engineering judgment in making this selection.

(b) The manufacturer may select, using good engineering judgment, an equivalent or worst-case configuration in lieu of testing the vehicle selected in paragraph (a) of this section. Carryover data satisfying the provisions of § 86.1839-01 may also be used in lieu of testing the configuration selected in paragraph (a) of this section.

**§ 86.1823-01 Durability demonstration procedures for exhaust emissions.**

This section applies to light-duty vehicles, light-duty trucks, and heavy-duty vehicles certified under the provisions of § 86.1801-01(c)(1). Eligible small volume manufacturers or small volume test groups may optionally meet the requirements of §§ 86.1838-01 and 86.1826-01 in lieu of the requirements of this section. For model years 2001, 2002, and 2003 all manufacturers may elect to meet the provisions of paragraph (c)(2) of this section in lieu of these requirements.

(a) The manufacturer shall propose a durability program consisting of the elements discussed in paragraphs (a)(1)

through (a)(3) of this section for advance approval by the Administrator. The durability process shall be designed to effectively predict the expected deterioration of candidate in-use vehicles over their full and intermediate useful life and shall be consistent with good engineering judgment. The Administrator will approve the program if he/she determines that it is reasonably expected to meet these design requirements.

(1) *Service accumulation method.* (i) Each durability program shall include a service accumulation method designed to effectively predict the deterioration of emissions in actual use over the full and intermediate useful life of candidate in-use vehicles.

(ii) Manufacturers may propose service accumulation methods based upon whole-vehicle full-mileage accumulation, whole vehicle accelerated mileage accumulation (e.g., where 40,000 miles on a severe mileage accumulation cycle is equivalent to 100,000 miles of normal in-use driving), bench aging of individual components or systems, or other approaches approved by the Administrator.

(A) For whole vehicle mileage accumulation programs, all emission control components and systems (including both hardware and software) must be installed and operating for the entire mileage accumulation period.

(B) Bench procedures shall simulate the aging of components or systems over the applicable useful life and shall simulate driving patterns and vehicle operational environments found in actual use. For this purpose, manufacturers may remove the emission-related components (and other components), in whole or in part, from the durability vehicle itself and deteriorate them independently. Vehicle testing for the purpose of determining deterioration factors may include the testing of durability vehicles that incorporate such bench-aged components.

(2) *Vehicle/component selection method.* The manufacturer shall propose a vehicle/component selection method for advance approval by the Administrator. The procedure for selecting durability data vehicles and components shall meet the requirements of § 86.1822-01.

(3) *Use of deterioration program to determine compliance with the standard.* The manufacturer shall propose procedures for the determination of compliance with the standards for advance approval by the Administrator. The calculation of deterioration factors and/or the determination of vehicle compliance

shall be according to the procedures approved in advance by the Administrator. The Administrator will allow two methods for using the results of the deterioration program to determine compliance with the standards. Either a deterioration factor (DF) is calculated and applied to the emission data vehicle (EDV) emission results or aged components are installed on the EDV prior to emission testing. Other methods may be approved by the Administrator if they result in an effective prediction of intermediate and full useful life emission levels on candidate in-use vehicles.

(i) *Use of Deterioration factors.* (A) Deterioration factors are calculated using all FTP emission test data generated during the durability testing program except as noted:

(1) Multiple tests at a given mileage point are averaged together unless the same number of tests are conducted at each mileage point.

(2) Before and after maintenance test results are averaged together.

(3) Zero-mile test results are excluded from the calculation.

(4) When calculating intermediate and full useful life deterioration factors all data points should be included in the calculations, except that total hydrocarbon (THC) test points beyond the 50,000-mile (useful life) test point shall not be included in the calculations.

(5) A procedure may be employed to identify and remove from the DF calculation those test results determined to be statistical outliers providing that the outlier procedure is consistently applied to all vehicles and data points and is approved in advance by the Administrator.

(B) The deterioration factor shall be based on a linear regression, or an other regression technique approved in advance by the Administrator. The deterioration may be a multiplicative or additive factor. Separate factors will be calculated for each regulated emission constituent and for the full and intermediate useful life periods as applicable. Separate DF's are calculated for each durability group except as provided in paragraph (c) of this section.

(1) A multiplicative DF will be calculated by taking the ratio of the full or intermediate useful life mileage level, as appropriate (rounded to four decimal places), divided by the stabilized mileage (reference § 86.1831-01(c), e.g., 4000-mile) level (rounded to four decimal places) from the regression analysis; the result shall be rounded to three-decimal places of accuracy. The rounding required in this paragraph

shall be conducted in accordance with the Rounding-Off Method specified in ASTM E29-93a, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference, see § 86.1). Calculated DF values of less than one shall be changed to one for the purposes of this paragraph.

(2) An additive DF will be calculated to be the difference between the full or intermediate useful life mileage level (as appropriate) minus the stabilized mileage (reference § 86.1831-01(c), e.g. 4000-mile) level from the regression analysis. The full useful life regressed emission value, the stabilized mileage regressed emission value, and the DF result shall be rounded to the same precision and using the same procedures as the raw emission results according to the provisions of § 86.1837-01. Calculated DF values of less than zero shall be changed to zero for the purposes of this paragraph.

(C) The DF calculated by these procedures will be used for determining compliance with FTP exhaust emission standards, SFTP exhaust emission standards, and cold CO emission standards. At the manufacturer's option and using procedures approved by the Administrator, a separate DF may be calculated exclusively using cold CO test data to determine compliance with cold CO emission standards. Also at the manufacturer's option and using procedures approved by the Administrator, a separate DF may be calculated exclusively using US06 and/or air conditioning (SC03) test data to determine compliance with the SFTP emission standards.

(ii) *Installation of aged components on emission data vehicles.* For full and intermediate useful life compliance determination, the manufacturer may elect to install aged components on an EDV rather than applying a deterioration factor. Different sets of components may be aged for full and intermediate useful life periods. The list of components to be installed, the techniques used to select physical parts to be aged, and the aging techniques employed to age the components must be approved in advance by the Administrator.

(b) In addition to the provisions of paragraph (a) of this section, manufacturers shall submit the following information when applying for the Administrator's approval of a durability program:

(1) Analysis and/or data demonstrating the adequacy of the manufacturer's durability processes to effectively predict emission compliance

for candidate in-use vehicles. All regulated emission constituents and all test procedures shall be considered in this analysis. This data and discussion shall cover the breadth of the manufacturer's product line that will be covered by this durability procedure.

(2) Discussion of the manufacturer's in-use verification procedures including testing performed, vehicle procurement procedures used, and vehicles rejection criteria used. Any questionnaires used or inspections performed should also be documented in the manufacturer's submission. The in-use verification program shall meet the requirements of §§ 86.1845-01, 86.1846-01 and 86.1847-01.

(c) *Carryover and carryacross.* (1) Manufacturers may carry over or carry across mileage accumulation data, aged hardware, or deterioration factors according to the provisions of § 86.1839-01 using good engineering judgment.

(2) For the 2001, 2002, and 2003 model years, the manufacturer may carry over exhaust emission DF's previously generated under the Standard AMA Durability Program described in § 86.094-13(c), the Alternate Service Accumulation Durability Program described in § 86.094-13(e) or the Standard Self-Approval Durability Program for light-duty trucks described in § 86.094-13(f) in lieu of complying with the durability provisions of paragraph (a)(1) of this section.

(i) This provision is limited to the use of existing data used for a 2000 model year or earlier certification. All new exhaust durability data must be generated according to the provisions of paragraph (a)(1) of this section.

(ii) The manufacturer shall exercise good engineering judgment when determining the eligibility to use carryover exhaust emission DF's and the selection of the vehicle used as the source of carryover.

(iii) Starting with the 2004 model year, manufacturers must meet the provisions of paragraphs (a) and (b) of this section.

(d) *Data reporting requirements.* Data reporting requirements are contained in § 86.1844-01.

(e) *Emission component durability.* The manufacturer shall use good engineering judgment to determine that all emission-related components are designed to operate properly for the full useful life of the vehicles in actual use.

(f) *In-use verification.* The durability program must meet the requirements of § 86.1845-01.

(g) The manufacturer shall apply the approved durability process to a

durability group, including durability groups in future model years, if the durability process will effectively predict (or alternatively, overstate) the deterioration of emissions in actual use over the full and intermediate useful life of candidate in-use vehicles. The manufacturer shall use good engineering judgment in determining the applicability of the durability program to a durability group.

(1) The manufacturer may make modifications to an approved durability process using good engineering judgment for the purpose of ensuring that the modified process will effectively predict, (or alternatively, overstate) the deterioration of emissions in actual use over the full and intermediate useful life of candidate in-use vehicles.

(2) The manufacturer shall notify the Administrator of its determination to use an approved (or modified) durability program on particular test groups and durability groups prior to emission data vehicle testing for the affected test groups (preferably at an annual preview meeting scheduled before the manufacturer begins certification activities for the model year).

(3) Prior to certification, the Administrator may reject the manufacturer's determination in paragraph (g) of this section if it is not made using good engineering judgment or it fails to properly consider data collected under the provisions of §§ 86.1845-01, 86.1846-01, and 86.1847-01 or other information if the Administrator determines that the durability process has not been shown to effectively predict emission levels or compliance with the standards in use on candidate vehicles for particular test groups which the manufacturers plan to cover with the durability process.

(h) The Administrator may withdraw approval to use a durability process or require modifications to a durability process based on the data collected under §§ 86.1845-01, 86.1846-01, and 86.1847-01 or other information if the Administrator determines that the durability processes have not been shown to accurately predict emission levels or compliance with the standards in use on candidate vehicles (provided the inaccuracy could result in a lack of compliance with the standards for a test group covered by this durability process). Such withdrawals shall apply to future applications for certification and to the portion of the manufacturer's product line (or the entire product line) that the Administrator determines to be affected. Prior to such a withdrawal the Administrator shall give the

manufacturer a preliminary notice at least 60 days prior to the final decision. During this period, the manufacturer may submit technical discussion, statistical analyses, additional data, or other information which is relevant to the decision. The Administrator will consider all information submitted by the deadline before reaching a final decision.

(i) Any manufacturer may request a hearing on the Administrator's withdrawal of approval in paragraph (h) of this section. The request shall be in writing and shall include a statement specifying the manufacturer's objections to the Administrator's determinations, and data in support of such objection. If, after review of the request and supporting data, the Administrator finds that the request raises a substantial factual issue, she/he shall provide the manufacturer a hearing in accordance with § 86.1853-01 with respect to such issue.

**§ 86.1824-01 Durability demonstration procedures for evaporative emissions.**

This section applies to gasoline-, methanol-, liquefied petroleum gas-, and natural gas-fueled light-duty vehicles and light-duty trucks. The manufacturer shall determine a durability process that will predict the expected evaporative emission deterioration of candidate in-use vehicles over their full useful life. The manufacturer shall use good engineering judgment in determining this process.

(a) Service accumulation method. (1) The manufacturer shall develop a service accumulation method designed to effectively predict the deterioration of candidate in-use vehicles' evaporative emissions in actual use over its full useful life. The manufacturer shall use good engineering judgement in developing this method.

(2) The manufacturers may develop a service accumulation methods based upon whole-vehicle full-mileage accumulation, whole vehicle accelerated mileage accumulation (e.g., where 40,000 miles on a severe mileage accumulation cycle is equivalent to 100,000 miles of normal in-use driving), bench aging of individual components or systems, or other approaches approved by the Administrator.

(i) For whole vehicle mileage accumulation programs, all emission control components and systems (including both hardware and software) must be installed and operating for the entire mileage accumulation period.

(ii) Bench procedures shall simulate the aging of components or systems over the applicable useful life and shall simulate driving patterns and vehicle

operational environments found in actual use. For this purpose, manufacturers may remove the emission-related components (and other components), in whole or in part, from the durability vehicle itself and deteriorate them independently. Vehicle testing for the purpose of determining deterioration factors may include the testing of durability vehicles that incorporate such bench-aged components.

(b) Vehicle/component selection method. The manufacturer shall determine a vehicle and component selection procedure which results in representative test vehicles and reflects good engineering judgment.

(c) The manufacturer shall calculate a deterioration factor which is applied to the evaporative emission results of the emission data vehicles. The deterioration factor shall be based on a linear regression, or an other regression technique approved in advance by the Administrator. The DF will be calculated to be the difference between the full life mileage evaporative level minus the stabilized mileage (e.g., 4000-mile) evaporative level from the regression analysis. The DF and the full and stabilized mileage emission levels shall be rounded to two decimal places of accuracy in accordance with the Rounding-Off Method specified in ASTM E29-93a, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference, see § 86.1(b)(1)). Calculated DF values of less than zero shall be changed to zero for the purposes of this paragraph.

(d) Emission component durability. The manufacturer shall use good engineering judgment to determine that all emission-related components are designed to operate properly for the full useful life of the vehicles in actual use.

(e) In-use verification. The durability program must meet the requirements of § 86.1845-01.

(f) Information obtained under §§ 86.1845-01, 86.1846-01, 86.1847-01 or from other sources shall be used by the manufacturer in developing new durability processes and/or updating existing durability processes using good engineering judgment.

**§ 86.1825-01 Durability demonstration procedures for refueling emissions.**

This section applies to light-duty vehicles, light-duty trucks, and heavy-duty vehicles which are certified under light-duty rules as allowed under the provisions of § 86.1801-01(c)(1) which are subject to refueling loss emission compliance. Refer to the provisions of

§§ 86.1811, 86.1812, 86.1813, 86.1814, and 86.1815 to determine applicability of the refueling standards to different classes of vehicles for various model years. Diesel fuel vehicles may qualify for an exemption to the requirements of this section under the provisions of § 86.1810. The manufacturer shall determine a durability process that will predict the expected refueling emission deterioration of candidate in-use vehicles over their full useful life. The manufacturer shall use good engineering judgment in determining this process.

(a) Service accumulation method. (1) The manufacturer shall develop a service accumulation method designed to effectively predict the deterioration of candidate in-use vehicles' refueling loss emissions in actual use over its full useful life. The manufacturer shall use good engineering judgment in developing this method.

(2) The manufacturers may develop a service accumulation methods based upon whole-vehicle full-mileage accumulation, whole vehicle accelerated mileage accumulation (e.g., where 40,000 miles on a severe mileage accumulation cycle is equivalent to 100,000 miles of normal in-use driving), bench aging of individual components or systems, or other approaches approved by the Administrator.

(i) For whole vehicle mileage accumulation programs, all emission control components and systems (including both hardware and software) must be installed and operating for the entire mileage accumulation period.

(ii) Bench procedures shall simulate the aging of components or systems over the applicable useful life and shall simulate driving patterns and vehicle operational environments found in actual use. For this purpose, manufacturers may remove the emission-related components (and other components), in whole or in part, from the durability vehicle itself and deteriorate them independently. Vehicle testing for the purpose of determining deterioration factors may include the testing of durability vehicles that incorporate such bench-aged components.

(b) Vehicle/component selection method. The manufacturer shall determine a vehicle and component selection procedure which results in representative test vehicles and reflects good engineering judgment.

(c) The manufacturer shall calculate a deterioration factor which is applied to the refueling emission results of the emission data vehicles. The deterioration factor shall be based on a linear regression, or an other regression technique approved in advance by the

Administrator. The DF will be calculated to be the difference between the full life mileage refueling loss emission level minus the stabilized mileage (e.g., 4000-mile) refueling loss emission level from the regression analysis. The DF and the full and stabilized mileage emission levels shall be rounded to two decimal places of accuracy in accordance with the Rounding-Off Method specified in ASTM E29-93a, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference, see § 86.1(b)(1)). Calculated DF values of less than zero shall be changed to zero for the purposes of this paragraph.

(d) The durability process described in paragraph (a) of this section must be described in the application for certification under the provisions of § 86.1844-01.

(e) Emission component durability. The manufacturer shall use good engineering judgment to determine that all emission-related components are designed to operate properly for the full useful life of the vehicles in actual use.

(f) In-use verification. The durability program must meet the requirements of § 86.1845-01.

(g) Information obtained under §§ 86.1845-01, 86.1846-01, 86.1847-01 or from other sources shall be used by the manufacturer in developing new durability processes and/or updating existing durability processes using good engineering judgment.

**§ 86.1826-01 Assigned deterioration factors for small volume manufacturers and small volume test groups.**

(a) *Applicability.* This program is an option available to small volume manufacturers certified under the small volume manufacturer provisions of § 86.1838-01(b)(1) and small volume test groups certified under the small volume test group provisions of § 86.1838-01(b)(2). Manufacturers may elect to use these procedures in lieu of the requirements of §§ 86.1823-01, 86.1824-01, and 86.1825-01 of this subpart.

(b) *Determination of deterioration factors.* No service accumulation method or vehicle/component selection method is required. Deterioration factors for all types of regulated emissions are determined using the provisions in this paragraph. A separate assigned deterioration factor is required for each durability group. Manufacturers shall use good engineering judgment in determining deterioration factors.

(1) Manufacturers with aggregated sales of less than 301 motor vehicles

and motor vehicle engines per year (determined under the provisions of § 86.1838-01(b)) may use assigned deterioration factors that the Administrator determines and prescribes.

(i) The deterioration factors will be the Administrator's estimate, periodically updated and published in a guidance document or advisory circular, of the 70th percentile deterioration factors calculated using the industry-wide data base of previously completed durability data vehicles or engines used for certification.

(ii) If there is insufficient deterioration information to calculate an appropriate industry-wide deterioration factor (for example: a new engine technology coupled with a proven emission control system), the Administrator may, at his/her discretion, use alternative methods to develop a deterioration factor.

(2) Manufacturers with aggregated sales from and including 301 through 14,999 motor vehicles and motor vehicle engines per year (determined under the provisions of § 86.1838-01(b)) certifying light-duty vehicle or trucks on vehicles equipped with proven emission control systems shall conform to the following provisions:

(i) Manufacturers shall use assigned deterioration factors that the manufacturer determines based on its good engineering judgment.

(A) The manufacturer may not use deterioration factors less than either the average or 70th percentile of all of that manufacturer's deterioration factor data, whichever is less. These minimum deterioration factors shall be calculated according to procedures in paragraph (b)(2)(ii), of this section.

(B) If the manufacturer does not have at least two data points to calculate these manufacturer specific average deterioration factors, then the deterioration factors shall be no less than the EPA supplied industry-wide deterioration factors.

(C) If there is insufficient deterioration information to calculate an appropriate industry-wide deterioration factor (for example, a new engine technology coupled with a proven emission control system), the Administrator may, at his/her discretion, use alternative methods to develop a deterioration factor.

(ii) The manufacturer's minimum deterioration factors shall be calculated using the deterioration factors from all durability groups, within the same vehicle/engine-fuel usage category (e.g., gasoline-fueled light-duty vehicle, etc.) previously certified to the same emission standards.

(A) The manufacturer shall use only deterioration factors from durability groups whose test groups were previously certified by the manufacturer and the deterioration factors shall not be included in the calculation more than once.

(B) The deterioration factors for each pollutant shall be calculated separately.

(C) The manufacturer may, at its option, limit the deterioration factors used in the calculation of the manufacturer's minimum deterioration factors to those from all similar emission control systems to the system being certified if sufficient data (i.e., from at least two certified systems) exists.

(D) All data eligible to be grouped as similar emission control system data shall be used in calculating similar system deterioration factors.

(E) Any deterioration factors used in calculating similar system deterioration factors shall not be included in calculating the manufacturer's minimum deterioration factors used to certify any of the manufacturer's remaining vehicle systems.

(3) Manufacturers with aggregated sales from 301 through 14,999 motor vehicles and motor vehicle engines and certifying light-duty vehicle exhaust emissions from vehicles equipped with unproven emission control systems shall conform to the following provisions:

(i) The manufacturer shall use deterioration factors that the manufacturer determines from official certification durability data generated by vehicles from durability groups representing a minimum of 25 percent of the manufacturer's sales equipped with unproven emission control systems.

(ii) The sales projections are to be based on total sales projected for each test group.

(iii) The durability data vehicle mileage accumulation and emission tests are to be conducted in accordance with § 86.1831-01.

(iv) The manufacturer must develop either deterioration factors or aged components to use on EDV testing by generating durability data in accordance with § 86.1823-01, 86.1824-01, and/or 86.1825-01 on a minimum of 25 percent of the manufacturer's projected sales (based on durability groups) that is equipped with unproven emission control systems.

(v) The manufacturer must complete the 25 percent durability requirement before the remainder of the manufacturer's sales equipped with unproven emission control systems is

certified using manufacturer-determined assigned deterioration factors.

(c) *Emission component durability.* The manufacturer shall use good engineering judgment to determine that all emission-related components are designed to operate properly for the useful life of the vehicles in actual use (or alternative intervals as permitted in § 86.1805-01).

**§ 86.1827-01 Test group determination.**

This section applies to the grouping of vehicles into test groups within a durability group. The vehicles covered by an application within a durability group shall be divided into test groups based on the following criteria. The manufacturer shall use good engineering judgment in grouping vehicles into test groups.

(a) To be included in the same test group, vehicles must be identical in all following respects:

- (1) Durability group;
- (2) Engine displacement (within a total band width of 15 percent of the largest displacement or 50 CID, whichever is larger);
- (3) Number of cylinders or combustion chambers;
- (4) Arrangement of cylinders or combustion chambers (e.g. in-line, v-shaped);
- (5) Subject to the same emission standards. Light-duty trucks which are subject to the same emission standards as light-duty vehicles with the exception of the light-duty truck idle CO standard and/or total HC standard may be included in the same test group.

(b) Where vehicles are of a type which cannot be divided into test groups based on the criteria listed above (such as non-cylinder engines), the Administrator will establish test groups for those vehicles based upon the features most related to their exhaust emission characteristics.

(c) Manufacturers may further divide groups determined under paragraph (a) of this section providing the Administrator is notified in advance of any such changes in writing.

(d) Manufacturers may request the Administrator's approval to combine vehicles into a single test group which would normally not be eligible to be in a single test group. The petition should provide:

- (1) Substantial evidence that all the vehicles in the larger grouping will have the similar levels of emissions;
- (2) Evidence of equivalent component durability over the vehicle's useful life; and
- (3) Evidence that the groups will result in sufficient in-use verification program data, appropriate tracking in

use, and clear liability for the Agency's recall program.

**§ 86.1828-01 Emission data vehicle selection.**

(a) *FTP and SFTP testing.* Within each test group, the vehicle configuration shall be selected which is expected to be worst-case for exhaust emission compliance on candidate in-use vehicles, considering all exhaust emission constituents, all exhaust test procedures, and the potential impact of air conditioning on test results. The selected vehicle will include an air conditioning engine code unless the worst-case vehicle configuration selected is not available with air conditioning. This vehicle configuration will be used as the EDV calibration.

(b) *Evaporative/Refueling testing.* Vehicles of each evaporative/refueling family will be divided into evaporative/refueling emission control systems.

(1) The vehicle configuration expected to exhibit the highest evaporative and/or refueling emission on candidate in-use vehicles shall be selected for each evaporative/refueling family and evaporative/refueling emission system combination from among the corresponding vehicles selected for FTP and SFTP testing under paragraph (a) of this section. Separate vehicles may be selected to be tested for evaporative and refueling testing.

(2) Each test group must be represented by both evaporative and refueling testing (provided that the refueling standards are applicable) before it may be certified. That required testing may have been conducted on a vehicle in another test group provided the tested vehicle is a member of the same evaporative/refueling family and evaporative/refueling emission system combination and it was selected for testing in accordance with the provisions of paragraph (b)(1) of this section.

(3) For evaporative/refueling emission testing, the vehicle(s) selected shall be equipped with the worst-case evaporative/refueling emission hardware available on that vehicle considering such items as canister size and material, fuel tank size and material, purge strategy and flow rates, refueling characteristics, and amount of vapor generation.

(c) *Cold CO testing.* For cold temperature CO exhaust emission compliance for each durability group, the vehicle expected to emit the highest CO emissions at 20 degrees F on candidate in-use vehicles shall be selected from the test vehicles selected in accordance with paragraph (a) of this section.

(d) *Certification Short Test testing.* For CST exhaust emission compliance for each durability group, the vehicle expected to emit the highest CST emissions on candidate in-use vehicles shall be selected from the vehicles selected in accordance with paragraph (a) of this section. The manufacturer may elect to submit a compliance statement in lieu of test data under the provisions of § 86.1829-01.

(e) The manufacturer may select, using good engineering judgement, an equivalent or worst-case configuration in lieu of testing the vehicle selected in paragraphs (a) through (d) of this section. Carryover data satisfying the provisions of § 86.1839-01 may also be used in lieu of testing the configuration selected in paragraphs (a) through (d) of this section.

(f) The manufacturer shall use good engineering judgment in making selections of vehicles under this section.

**§ 86.1829-01 Durability and emission testing requirements; waivers.**

(a) *Durability demonstration.* (1) One durability demonstration is required for each durability group.

(2) The configuration of the DDV is determined according to the provisions of § 86.1822-01.

(3) The DDV shall be tested and accumulate service mileage according to the provisions of §§ 86.1831-01, 86.1823-01, 86.1824-01 and 86.1825-01. Small volume manufacturers and small volume test groups may optionally meet the requirements of § 86.1838-01.

(b) *Emissions demonstration.* (1) *FTP and SFTP Exhaust Testing.* (i) *Testing at low altitude.* One EDV shall be tested in each test group for exhaust emissions using the FTP and SFTP test procedures of subpart B of this part. The configuration of the EDV will be determined under the provisions of § 86.1828-01 of this subpart.

(ii) *Testing at high altitude.* For high-altitude exhaust emission compliance for each test group, the manufacturer shall follow one of the following two procedures:

(A) One EDV shall be tested in each test group for exhaust emissions using the FTP test procedures of subpart B of this part. The configuration of the EDV will be determined under the provisions of § 86.1828-01; or

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

and light-duty trucks comply with the emission standards at high altitude.

(iii) *Data submittal waivers.* (A) In lieu of testing a methanol-fueled diesel-cycle light truck for particulate emissions a manufacturer may provide a statement in its application for certification that such light trucks comply with the applicable standards. Such a statement shall be based on previous emission tests, development tests, or other appropriate information.

(B) In lieu of testing a gasoline-fueled or methanol-fueled Otto-cycle certification light-duty vehicle or light-duty trucks for particulate emissions a manufacturer may provide a statement in its application for certification that such vehicles comply with the applicable standards. Such a statement shall be based on previous emission tests, development tests, or other appropriate information.

(C) A manufacturer may petition the Administrator for a waiver of the requirement to submit total hydrocarbon emission data. If the waiver is granted, then in lieu of testing a certification light-duty vehicle or light-duty truck for total hydrocarbon emissions the manufacturer may provide a statement in its application for certification that such vehicles comply with the applicable standards. Such a statement shall be based on previous emission tests, development tests, or other appropriate information.

(D) A manufacturer may petition the Administrator to waive the requirement to measure particulate emissions when conducting Selective Enforcement Audit testing of Otto-cycle vehicles.

(2) *Evaporative/Refueling testing.* Vehicles of each evaporative/refueling family will be divided into evaporative/refueling emission control systems. Applicability of the refueling test requirements of this paragraph shall be determined in accordance with the applicability of the refueling loss standards under the provisions of § 86.1810.

(i) *Testing at low altitude.* One EDV in each evaporative/refueling family and evaporative/refueling emission control system combination shall be tested in accordance with the evaporative/refueling test procedure requirement of subpart B of this part. The configuration of the EDV will be determined under the provisions of § 86.1828-01. The EDV must also be tested for exhaust emission compliance using the FTP and SFTP procedures of subpart B of this part.

(ii) *Testing at high altitude.* For high-altitude evaporative and/or refueling emission compliance for each evaporative/refueling family, the

manufacturer shall follow one of the following two procedures:

(A) One EDV in each evaporative/refueling family and evaporative/refueling emission control system combination shall be tested in accordance with the evaporative/refueling test procedure requirement of subpart B of this part. The configuration of the EDV will be determined under the provisions of § 86.1824-01. The EDV must also be tested for exhaust emissions using the FTP procedures of subpart B of this part while operated at high altitude; or

(B) In lieu of testing vehicles according to the provisions of paragraph (b)(2)(ii)(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, all light-duty vehicles and light-duty trucks comply with the emission standards at high altitude.

(3) *Cold CO Testing.* One EDV in each durability group shall be tested for cold temperature CO exhaust emission compliance in accordance with the test procedures in subpart C of this part or with alternative procedures requested by the manufacturer and approved in advance by the Administrator. The selection of which EDV and test group within the durability group will be tested for cold CO compliance will be determined under the provisions of § 86.1828-01(c).

(4) *Certification Short Test testing.* (i) To determine CST emission compliance for each durability group, the manufacturer shall follow one of the following two procedures:

(A) One EDV in each durability group shall be tested in accordance with the CST procedures set forth in subpart O of this part. The configuration of the EDV will be determined under the provisions of § 86.1828-01(d). The EDV must also be tested for exhaust emissions using the FTP and SFTP procedures of subpart B of this part; or

(B) In lieu of testing vehicles according to the provisions of § 86.1829-01(b)(4)(i)(A), a manufacturer may provide a statement in its application for certification that, based on the manufacturer's engineering evaluation of such CST testing as the manufacturer deems appropriate, all light-duty vehicles and light-duty trucks comply with the CST emission standards.

(ii) For light-duty vehicles and light-duty trucks, a manufacturer with a test group that cannot be appropriately tested on all Certification Short Test



emission test procedures described in § 86.1439 may request an exemption, as described in § 86.1427(d), from the inappropriate test(s) for purposes of demonstrating compliance with the Certification Short Test as described in subpart O of this part.

(iii) For light-duty vehicles and light-duty trucks, a manufacturer with a test group that can be appropriately tested on none of the Certification Short Test emission test procedures described in § 86.1439 may request an alternative procedure as described in § 86.1427(d).

(5) *Idle CO Testing.* To determine idle CO emission compliance for light-duty trucks, the manufacturer shall follow one of the following two procedures:

(i) For test groups containing light-duty trucks, each EDV shall be tested in accordance with the idle CO testing procedures of subpart B of this part; or

(ii) In lieu of testing light trucks for idle CO emissions, a manufacturer may provide a statement in its application for certification that, based on the manufacturer's engineering evaluation of such idle CO testing as the manufacturer deems appropriate, all light-duty trucks comply with the idle CO emission standards.

(c) *Running change testing.* Running change testing shall be conducted as required under the provisions of § 86.1842-01.

**§ 86.1830-01 Acceptance of vehicles for emission testing.**

(a) *General test vehicle requirements.*

(1) All test vehicles shall be tested in the proper configurations as specified in §§ 86.1822-01, 86.1828-01, or 86.1842-01, as applicable for the type of test conducted.

(2) Components affecting emissions which are used to build test vehicles shall either be randomly selected production parts or parts verified to be in the middle 50 percent of the tolerance range. The manufacturer will determine which components affect emissions using good engineering judgment.

(3) Test vehicles must have air conditioning installed and operational if that configuration is available with air conditioning. Optional equipment must be installed or represented on test vehicles according to the provisions of § 86.1832-01.

(4) Test vehicles must receive proper scheduled maintenance as established by the manufacturer according to the provisions of § 86.1834-01(b) or (c). Unscheduled maintenance must be approved under the provisions of § 86.1834-01(d).

(5) Vehicle mileage shall be accumulated in accordance with § 86.1831-01.

(6) The road load forces and equivalent test weight used during testing will be determined according to the provisions of § 86.129-00.

(7) Test vehicles shall have the appropriate emission testing hardware installed (e.g., exhaust pipe testing flange, fuel tank drain, access ports to evaporative canisters, and fuel tank heat blanket) and shall have tires with appropriate tire wear.

(b) *Special provisions for durability data vehicles.* (1) For DDV's, the mileage at all test points shall be within 250 miles of the scheduled mileage point as required under § 86.1823-01(b). Manufacturers may exceed the 250 mile upper limit if there are logistical reasons for the deviation and the manufacturer determines that the deviation will not affect the representativeness of the durability demonstration.

(2) For DDV's, except as allowed under the bench testing provisions of § 86.1823-01, all emission-related hardware and software must be installed and operational during all mileage accumulation after the 5000-mile test point.

(3) DDV's may be reconfigured before the 5000-mile test point providing that the representativeness of the emission results will not be affected. Manufacturers shall use good engineering judgment in making such determinations.

(c) *Special provisions for emission data vehicles.* (1) All EDV's shall have at least the minimum number of miles accumulated to achieve stabilized emission results according to the provisions of § 86.1831-01(c)(4).

(2) Within a durability group, the manufacturer may alter any emission data vehicle (or other vehicles such as current or previous model year emission data vehicles, running change vehicles, fuel economy data vehicles, and development vehicles) in lieu of building a new test vehicle providing that the modification will not impact the representativeness of the vehicle's test results. Manufacturers shall use good engineering judgment in making such determinations. Development vehicles which were used to develop the calibration selected for emission data testing may not be used as the EDV for that configuration. Vehicles from outside the durability group may be altered with advance approval of the Administrator.

(3) Components used to reconfigure EDV's under the provisions of paragraph (c)(2) of this section shall be appropriately aged if necessary to

achieve representative emission results. Manufacturers shall determine the need for component aging and the type and amount of aging required using good engineering judgment.

(4) Bench-aged hardware may be installed on an EDV for emission testing as a method of determining certification levels (projected emission levels at full or intermediate useful life) using bench aging procedures approved under the provisions of § 86.1823-01.

**§ 86.1831-01 Mileage accumulation requirements for test vehicles.**

(a) *Durability Data Vehicles.* (1) The manufacturer shall accumulate mileage on DDV's using the procedures which have been approved under the provisions of § 86.1823-01(a)(1).

(2) All tests required by this subpart on durability data vehicles shall be conducted within 250 miles of each of the nominal test point mileage. This +/-250 mile test point mileage tolerance may be modified with the advance approval of the Administrator if the basis for the written request is to prevent an interruption of durability mileage accumulation due to test scheduling conflicts for weekends, holidays, or other similar circumstances.

(b) *Emission data vehicles and running change vehicles.* (1) The standard method of service accumulation for emission data vehicles and running change vehicles shall be mileage accumulation using the Durability Driving Schedule as specified in Appendix IV to this part.

(2) The manufacturer may use an alternative mileage accumulation method providing the form and extent of the service accumulation represents normal driving patterns for that vehicle, the method is consistent with good engineering judgment, and the method is described in the application for certification.

(3) 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 respective emission tests at higher loaded vehicle weight.

(c) The manufacturer shall determine the mileage at which the emission control system and engine combination is stabilized for emission-data testing. The manufacturer shall provide to the Administrator if requested, a record of the analysis used in making this determination. The manufacturer may

elect to accumulate 2,000 miles (3,219 kilometers) or more on each test vehicle without making a determination. The manufacturer must accumulate a minimum of 1,000 miles (1,608 kilometers) on each emission data vehicle.

(d) All test vehicle mileage must be accurately determined, recorded, and reported to the Administrator upon request.

**§ 86.1832-01 Optional equipment and air conditioning for test vehicles.**

For test vehicles selected under §§ 86.1822-01 and 86.1828-01:

(a)(1) Where it is expected that more than 33 percent of a car line, within a test group, will be equipped with an item (whether that item is standard equipment or an option), the full estimated weight of that item must be included in the curb weight computation for each vehicle available with that item in that car line, within that test group.

(2) Where it is expected that 33 percent or less of the car line, within a test group, 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 car line, within that test group, unless that item is standard equipment on the vehicle.

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

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

(b)(1) Where it is expected that more than 33 percent of a car line, within a test group, 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 must actually be installed (unless excluded under paragraph (b)(2) of this section) on all emission data and durability data vehicles of that car line, within that test group, on which the items are intended to be offered in production. Items that can reasonably be expected to influence emissions include, but are not limited to: air conditioning, power steering, and power brakes.

(2) If the manufacturer determines by test data or engineering evaluation that the actual installation of the optional equipment required by paragraph (b)(1) of this section does not affect the emissions or fuel economy values, the optional equipment need not be installed on the test vehicle.

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

(4) 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 be made available to the Agency upon request by the Administrator within 15 business days.

(c) Except for air conditioning, where it is expected that 33 percent or less of a car line, within a test group, 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 may not be installed on any emission data vehicle or durability data vehicle of that car line within that test group, unless that item is standard equipment on that vehicle or specifically required by the Administrator.

(d) Air conditioning must be installed and operational on any emission data vehicle of any vehicle configuration that is projected to be available with air conditioning regardless of the rate of installation of air conditioning within the car line. Paragraphs (a) through (c) of this section will be used to determine whether the weight of the air conditioner will be included in the equivalent test weight calculations for emission testing.

**§ 86.1833-01 Adjustable parameters.**

(a) At the time that emission data vehicles are selected for the test fleet, a determination shall be made of 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. The manufacturer shall use good engineering judgment in making such determinations and shall notify the Administrator of its determinations prior to emission data vehicle testing for the affected test groups (preferably at an annual preview meeting scheduled before the manufacturer begins certification activities for the model year).

(1) Determining parameters subject to adjustment.

(i) The following parameters may be subject to adjustment: the idle fuel-air mixture parameter on Otto-cycle vehicles; the choke valve action parameter(s) on carbureted, Otto-cycle vehicles (or engines); or any parameter on any vehicle (Otto-cycle or diesel) which is physically capable of being

adjusted, may significantly affect emissions, and was not present on the manufacturer's vehicles (or engines) in the previous model year in the same form and function.

(ii) Any other parameters on any vehicle or engine which are physically capable of being adjusted and which may significantly affect emissions may be determined to be subject to adjustment. However, the Administrator may do so only if he/she has previously notified the manufacturer that he/she might do so and has found, at the time he/she gave this notice, that the intervening period would be adequate to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period. In no event will this notification be given later than September 1 of the calendar year two years prior to the model year.

(iii) In determining the parameters subject to adjustment, the following shall be taken into consideration: the likelihood that, for each of the parameters listed in paragraphs (e)(1) (i) and (ii) of this section, settings other than the manufacturer's recommended setting will occur on in-use vehicles (or engines). In determining likelihood, such factors may be considered as information contained in the preliminary application, surveillance information from similar in-use vehicles, the difficulty and cost of gaining access to an adjustment, damage to the vehicle if an attempt is made to gain such access and the need to replace parts following such attempt, and the effect of settings other than the manufacturer's recommended setting on vehicle performance characteristics including emission characteristics.

(2)(i) A parameter may be determined to be adequately inaccessible or sealed if:

(A) In the case of an idle mixture screw, the screw is recessed within the carburetor casting and sealed with lead, thermosetting plastic, or an inverted elliptical spacer or sheared off after adjustment at the factory, and the inaccessibility is such that the screw cannot be accessed and/or adjusted with simple tools in one-half hour or for \$20 (1978 dollars) or less;

(B) In the case of a choke bimetal spring, the plate covering the bimetal spring is riveted or welded in place, or held in place with nonreversible screws;

(C) In the case of a parameter which may be adjusted by elongating or bending adjustable members (e.g., the choke vacuum break), the elongation of the adjustable member is limited by design or, in the case of a bendable member, the member is constructed of

a material which when bent would return to its original shape after the force is removed (plastic or spring steel materials);

(D) In the case of any parameter, the manufacturer demonstrates that adjusting the parameter to settings other than the manufacturer's recommended setting takes more than one-half hour or costs more than \$20 (1978 dollars).

(ii) A physical limit or stop shall be determined to be an adequate restraint on adjustability if:

(A) In the case of a threaded adjustment, the threads are terminated, pinned, or crimped so as to prevent additional travel without breakage or need for repairs which take more than one-half hour or cost more than \$20 (1978 dollars);

(B) The adjustment is ineffective at the end of the limits of travel regardless of additional forces or torques applied to the adjustment;

(C) The manufacturer demonstrates that travel or rotation limits cannot be exceeded with the use of simple and inexpensive tools (screwdriver, pliers, open-end or box wrenches, etc.) without incurring significant and costly damage to the vehicle or control system or without taking more than one-half hour or costing more than \$20 (1978 dollars).

(iii) If manufacturer service manuals or bulletins describe routine procedures for gaining access to a parameter or for removing or exceeding a physical limit, stop, seal or other means used to inhibit adjustment, or if surveillance data indicate that gaining access, removing, or exceeding is likely, paragraphs (a)(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 (a)(2)(i) or (ii) of this section, the following shall be considered: the likelihood that it will be circumvented, removed, or exceeded on in-use vehicles. In determining likelihood, such factors may be considered as, but not limited to, information contained in the preliminary application; surveillance information from similar in-use vehicles; the difficulty and cost of circumventing, removing, or exceeding the limit, stop, seal, or other means; damage to the vehicle 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 performance characteristics other than emission characteristics.

(v) In the case of electronic components on circuit boards (such as

onboard computers) the board is covered with a epoxy resin which inhibits the access to components on the board (commonly referred to as potting).

(3) Two physically adjustable ranges shall be determined for each parameter subject to adjustment:

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

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

(ii)(A) In the case of a parameter determined to be adequately inaccessible or sealed, only the actual settings to which the parameter is adjusted during production shall be included within the physically adjustable range applicable to testing under subparts G or K (Selective Enforcement Audit and Production Compliance Audit) of this part; or

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

(b) In lieu of making the determinations required in paragraph (a) of this section, the manufacturer may request a determination be made by the Administrator prior to emission testing. In that case, all the information discussed in paragraph (a) of this section shall be provided to the Administrator. The Administrator will respond within 90 days (excluding the elapsed time during which additional information requested by the Administrator is being gathered by the manufacturer) following the receipt of the request for determination.

(c) If the Administrator determines that the decisions made by the manufacturer under the provisions of paragraph (a) of this section were not made using good engineering judgment, the Administrator will overrule the manufacturers' decisions and conduct testing for Certification, Selective Enforcement Audit and/or Production Compliance Audit purposes by adjusting parameters according to his/her determination of those vehicle or

engine parameters subject to adjustment, the adequacy of the limits, stops, seals, or other means used to inhibit adjustment, and the resulting physically adjustable ranges for each such parameter. Furthermore, the Administrator may reject testing performed by the manufacturer which failed to follow his/her determinations.

(d) Within 30 days following receipt of notification of the Administrator's determinations made under paragraph (b) or (c) 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 § 86.1853-01 with respect to such issue.

#### § 86.1834-01 Allowable maintenance.

(a) Maintenance performed on vehicles, engines, subsystems, or components used to determine exhaust, evaporative or refueling emission deterioration factors, as appropriate, is classified as either emission-related or non-emission-related and each of these can be classified as either scheduled or unscheduled. Further, some emission-related maintenance is also classified as critical emission-related maintenance.

(b) This section specifies emission-related scheduled maintenance for purposes of obtaining durability data and for inclusion in maintenance instructions furnished to purchasers of new motor vehicles and under § 86.1808-01.

(1) All emission-related scheduled maintenance for purposes of obtaining durability data must occur at the same mileage intervals (or equivalent intervals if engines, subsystems, or components are used) that will be specified in the manufacturer's maintenance instructions furnished to the ultimate purchaser of the motor vehicle or engine under § 86.1808-01. This maintenance schedule may be updated as necessary throughout the testing of the vehicle/engine, provided that no maintenance operation is deleted from the maintenance schedule after the operation has been performed on the test vehicle or engine.

(2) Any emission-related maintenance which is performed on vehicles, engines, subsystems, or components must be technologically necessary to

assure in-use compliance with the emission standards. Manufacturers shall determine the technological need for maintenance using good engineering judgment. The Administrator has determined that emission-related maintenance at shorter intervals than those outlined in paragraphs (b)(3) and (4) of this section is not technologically necessary to ensure in-use compliance. However, the Administrator may determine that maintenance even more restrictive (e.g., longer intervals) than that listed in paragraphs (b)(3) and (4) of this section is also not technologically necessary.

(3) Emission-related maintenance in addition to, or at shorter intervals than, that listed in paragraphs (b)(3)(i) through (iv) of this section will not be accepted as technologically necessary, except as provided in paragraph (b)(6) of this section.

(i) The cleaning or replacement of light-duty vehicle or light-duty truck spark plugs shall occur at 30,000 miles of use and at 30,000-mile intervals thereafter.

(ii) The adjustment, cleaning, repair, or replacement of the following items shall occur at 50,000 miles of use and at 50,000-mile intervals thereafter:

- (A) Positive crankcase ventilation valve.
- (B) Emission-related hoses and tubes.
- (C) Ignition wires.
- (D) Idle mixture.

(iii) The adjustment, cleaning, repair, or replacement of the oxygen sensor shall occur at 80,000 miles (or 2,400 hours) of use and at 80,000-mile (or 2,400-hour) intervals thereafter.

(iv) The adjustment, cleaning, repair, or replacement of the following items shall occur at 100,000 miles of use and at 100,000-mile intervals thereafter:

- (A) Catalytic converter.
- (B) Air injection system components.
- (C) Fuel injectors.
- (D) Electronic engine control unit and its associated sensors (except oxygen sensor) and actuators.
- (E) Evaporative and/or refueling emission canister(s).
- (F) Turbochargers.
- (G) Carburetors.
- (H) Superchargers.

(I) EGR System including all related filters and control valves.

(J) Mechanical fillpipe seals.

(4) For diesel-cycle light-duty vehicles and light-duty trucks, emission-related maintenance in addition to, or at shorter intervals than the following will not be accepted as technologically necessary, except as provided in paragraph (b)(6) of this section:

(i) The adjustment, cleaning, repair, or replacement of the positive crankcase

ventilation valve shall occur at 50,000 miles of use and at 50,000-mile intervals thereafter.

(ii) The adjustment, cleaning, repair, or replacement shall occur at 100,000 miles of use and at 100,000-mile intervals thereafter of the following items:

- (A) Fuel injectors.
- (B) Turbocharger.
- (C) Electronic engine control unit and its associated sensors and actuators.
- (D) Particulate trap or trap-oxidizer system (including related components).
- (E) Exhaust gas recirculation system including all related filters and control valves.

(F) Catalytic converter.

(G) Superchargers.

(5) Critical emission-related components.

(i) The following components are defined as critical emission-related components:

- (A) Catalytic converter.
- (B) Air injection system components.
- (C) Electronic engine control unit and its associated sensors (including oxygen sensor if installed) and actuators.

(D) Exhaust gas recirculation system (including all related filters and control valves).

(E) Positive crankcase ventilation valve.

(F) Evaporative and refueling emission control system components (excluding canister air filter).

(G) Particulate trap or trap-oxidizer system.

(ii) All critical emission-related scheduled maintenance must have a reasonable likelihood of being performed in use. The manufacturer shall be required to show the reasonable likelihood of such maintenance being performed in use, and such showing shall be made prior to the performance of the maintenance on the durability data vehicle. Critical emission-related scheduled maintenance items which satisfy one of the conditions defined in paragraphs (b)(5)(ii)(A) through (F) of this section will be accepted as having a reasonable likelihood of the maintenance item being performed in use.

(A) Data are presented which establish for the Administrator a connection between emissions and vehicle performance such that as emissions increase due to lack of maintenance, vehicle performance will simultaneously deteriorate to a point unacceptable for typical driving.

(B) Survey data are submitted which adequately demonstrate to the Administrator that, at an 80 percent confidence level, 80 percent of such engines already have this critical

maintenance item performed in use at the recommended interval(s).

(C) A clearly displayed visible signal system approved by the Administrator is installed to alert the vehicle driver that maintenance is due. A signal bearing the message "maintenance needed" or "check engine," or a similar message approved by the Administrator, shall be actuated at the appropriate mileage point or by component failure. This signal must be continuous while the engine is in operation and not be easily eliminated without performance of the required maintenance. Resetting the signal shall be a required step in the maintenance operation. The method for resetting the signal system shall be approved by the Administrator.

(D) A manufacturer may desire to demonstrate through a survey that a critical maintenance item is likely to be performed without a visible signal on a maintenance item for which there is no prior in-use experience without the signal. To that end, the manufacturer may in a given model year market up to 200 randomly selected vehicles per critical emission-related maintenance item without such visible signals, and monitor the performance of the critical maintenance item by the owners to show compliance with paragraph (b)(5)(ii)(B) of this section. This option is restricted to two consecutive model years and may not be repeated until any previous survey has been completed. If the critical maintenance involves more than one test group, the sample will be sales weighted to ensure that it is representative of all the groups in question.

(E) The manufacturer provides the maintenance free of charge, and clearly informs the customer that the maintenance is free in the instructions provided under § 86.1808-01.

(F) Any other method which the Administrator approves as establishing a reasonable likelihood that the critical maintenance will be performed in use.

(iii) Visible signal systems used under paragraph (b)(5)(ii)(C) of this section are considered an element of design of the emission control system. Therefore, disabling, resetting, or otherwise rendering such signals inoperative without also performing the indicated maintenance procedure is a prohibited act under section 203(a)(3) of the Clean Air Act (42 U.S.C. 7522(a)(3)).

(6) Changes to scheduled maintenance. (i) For maintenance practices that existed prior to the 1980 model year, only the maintenance items listed in paragraphs (b)(3) and (4) of this section are currently considered by EPA to be emission-related. The Administrator may, however, determine

additional scheduled maintenance items that existed prior to the 1980 model year to be emission-related by announcement in a **Federal Register** Notice. In no event may this notification occur later than September 1 of the calendar year two years prior to the affected model year.

(ii) In the case of any new scheduled maintenance, the manufacturer must submit a request for approval to the Administrator for any maintenance that it wishes to recommend to purchasers and perform during durability determination. New scheduled maintenance is that maintenance which did not exist prior to the 1980 model year, including that which is a direct result of the implementation of new technology not found in production prior to the 1980 model year. The manufacturer must also include its recommendations as to the category (i.e., emission-related or non-emission-related, critical or non-critical) of the subject maintenance and, for suggested emission-related maintenance, the maximum feasible maintenance interval. Such requests must include detailed evidence supporting the need for the maintenance requested, and supporting data or other substantiation for the recommended maintenance category and for the interval suggested for emission-related maintenance. Requests for new scheduled maintenance must be approved prior to the introduction of the new maintenance. The Administrator will then designate the maintenance as emission-related or non-emission-related. For maintenance items established as emission-related, the Administrator will further designate the maintenance as critical if the component which receives the maintenance is a critical component under paragraph (b)(5) of this section. For each maintenance item designated as emission-related, the Administrator will also establish a technologically necessary maintenance interval, based on industry data and any other information available to EPA. Designations of emission-related maintenance items, along with their identification as critical or non-critical, and establishment of technologically necessary maintenance intervals, will be announced in the **Federal Register**.

(iii) Any manufacturer may request a hearing on the Administrator's determinations in paragraph (b)(6) of this section. The request shall be in writing 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 § 86.1853-01 with respect to such issue.

(c) Non-emission-related scheduled maintenance which is reasonable and technologically necessary (e.g., oil change, oil filter change, fuel filter change, air filter change, cooling system maintenance, adjustment of idle speed, governor, engine bolt torque, valve lash, injector lash, timing, adjustment of air pump drive belt tension, lubrication of the exhaust manifold heat control valve, lubrication of carburetor choke linkage, re-torquing carburetor mounting bolts, etc.) may be performed on durability data vehicles at the least frequent intervals recommended by the manufacturer to the ultimate purchaser, (e.g., not at the intervals recommended for severe service).

(d) Unscheduled maintenance on light-duty durability data vehicles.

(1) Unscheduled maintenance may be performed during the testing used to determine deterioration factors, except as provided in paragraphs (d)(2) and (3) of this section, only under the following provisions defined in paragraphs (d)(1)(i) through (iii) of this section:

(i) A fuel injector or spark plug may be changed if a persistent misfire is detected.

(ii) Readjustment of an Otto-cycle vehicle cold-start enrichment system may be performed if there is a problem of stalling.

(iii) Readjustment of the engine idle speed (curb idle and fast idle) may be performed in addition to that performed as scheduled maintenance under paragraph (c) of this section if the idle speed exceeds the manufacturer's recommended idle speed by 300 rpm or more, or if there is a problem of stalling.

(2) Any other unscheduled vehicle, emission control system, or fuel system adjustment, repair, removal, disassembly, cleaning, or replacement during testing to determine deterioration factors shall be performed (using good engineering judgment) only in the following circumstances:

(i) The part failure or system malfunction, or the repair of such failure or malfunction, does not render the vehicle or engine unrepresentative of vehicles or engines in use and does not require direct access to the combustion chamber, except for spark plug, fuel injection component, or removable prechamber removal or replacement.

(ii) The need for maintenance or repairs is indicated by an overt indication of malfunction such as persistent misfiring, engine stalling,

overheating, fluid leakage, loss of oil pressure, excessive fuel consumption, or excessive power loss. The Administrator shall be given the opportunity to verify the existence of an overt indication of part failure and/or vehicle/engine malfunction (e.g., misfiring, stalling, black smoke), or an activation of an audible and/or visible signal, prior to the performance of any maintenance to which such overt indication or signal is relevant under the provisions of this section.

(iii) The OBD system of a durability data vehicle representing an test group certifying fully to the Federal OBD requirements as specified in § 86.1806-01(a) through (h) has specifically detected the problem and has illuminated the malfunction indicator light.

(3) Emission measurement may not be used as a means of determining the need for unscheduled maintenance under paragraph (d)(2) of this section, except under the following conditions:

(i) The Administrator may approve unscheduled maintenance on durability data vehicles based upon a significant change in emission levels that indicates a vehicle or engine malfunction. In these cases the Administrator may first approve specific diagnostic procedures to identify the source of the problem. The Administrator may further approve of specific corrections to the problem after the problem has been identified. The Administrator may only approve the corrective action after it is determined that:

(A) The malfunction was caused by nonproduction build practices or by a previously undetected design problem;

(B) The malfunction will not occur in production vehicles or engines in use; and

(C) The deterioration factor generated by the durability data vehicle or engine will remain unaffected by the malfunction or by the corrective action (e.g., the malfunction was present for only a short period of time before detection, replacement parts are functionally representative of the proper mileage or hours, etc.).

(ii) Following any unscheduled maintenance approved under paragraph (d)(3)(i) of this section, the manufacturer shall perform an after-maintenance emission test. If the Administrator determines that the after-maintenance emission levels for any pollutant indicates that the deterioration factor is no longer representative of production, the Administrator may disqualify the durability data vehicle or engine.

(4) If a part failure or system malfunction occurrence and/or repair has rendered the vehicle/engine

unrepresentative of vehicles in use, the vehicle/engine shall not be used for determining deterioration factors.

(5) Repairs to vehicle components of a durability data vehicle other than the engine, emission control system, or fuel system, shall be performed only as a result of part failure, vehicle system malfunction, or with the advance approval of the Administrator.

(e) Maintenance on emission data vehicles and engines. (1) Adjustment of engine idle speed on emission data vehicles may be performed once before the low-mileage/low-hour emission test point. Any other engine, emission control system, or fuel system adjustment, repair, removal, disassembly, cleaning, or replacement on emission data vehicles shall be performed only with the advance approval of the Administrator.

(2) Repairs to vehicle components of an emission data vehicle other than the engine, emission control system, or fuel system, shall be performed only as a result of part failure, vehicle system malfunction, or with the advance approval of the Administrator.

(f) Equipment, instruments, or tools may not be used to identify malfunctioning, maladjusted, or defective engine components unless the same or equivalent equipment, instruments, or tools will be available to dealerships and other service outlets and:

(1) Are used in conjunction with scheduled maintenance on such components; or

(2) Are used subsequent to the identification of a vehicle or engine malfunction, as provided in paragraph (d)(2) of this section for durability data vehicles or in paragraph (e)(1) of this section for emission data vehicles; or

(3) Unless specifically authorized by the Administrator.

(g) Complete emission tests (see §§ 86.106–96 through 86.145–82) are required, unless waived by the Administrator, before and after scheduled maintenance approved for durability data vehicles. The manufacturer may perform emission tests before unscheduled maintenance. Complete emission tests are required after unscheduled maintenance which may reasonably be expected to affect emissions. The Administrator may waive the requirement to test after unscheduled maintenance. These test data may be submitted weekly to the Administrator, but shall be air posted or delivered within 7 days after completion of the tests, along with a complete record of all pertinent maintenance, including a preliminary engineering report of any malfunction

diagnosis and the corrective action taken. A complete engineering report shall be delivered to the Administrator concurrently with the manufacturer's application for certification.

(h) When air conditioning SFTP exhaust emission tests are required, the manufacturer must document that the vehicle's air conditioning system is operating properly and in a representative condition. Required air conditioning system maintenance is performed as unscheduled maintenance and does not require the Administrator's approval.

#### § 86.1835–01 Confirmatory certification testing.

(a) *Testing by the Administrator.* (1) The Administrator may require that any one or more of the test vehicles be submitted to the Agency, at such place or places as the Agency may designate, for the purposes of conducting emissions tests. The Administrator may specify that such testing be conducted at the manufacturer's facility, in which case instrumentation and equipment specified by the Administrator shall be made available by the manufacturer for test operations. Any testing conducted at a manufacturer's facility pursuant to this paragraph shall be scheduled by the manufacturer as promptly as possible.

(i) The Administrator may adjust or cause to be adjusted any adjustable parameter of an emission-data vehicle which the Administrator has determined to be subject to adjustment for certification testing in accordance with § 86.1833–01(a)(1), to any setting within the physically adjustable range of that parameter, as determined by the Administrator in accordance with § 86.1833–01(a)(3), prior to the performance of any tests to determine whether such vehicle or engine conforms to applicable emission standards, including tests performed by the manufacturer under § 86.1829–01(b). However, if the idle speed parameter is one which the Administrator has determined to be subject to adjustment, the Administrator shall not adjust it to a setting which causes a higher engine idle speed than would have been possible within the physically adjustable range of the idle speed parameter on the engine before it accumulated any dynamometer service, all other parameters being identically adjusted for the purpose of the comparison. The Administrator, in making or specifying such adjustments, will consider the effect of the deviation from the manufacturer's recommended setting on emissions performance characteristics as well as the likelihood that similar settings will occur on in-use

light-duty vehicles or light-duty trucks. In determining likelihood, the Administrator will consider factors such as, but not limited to, the effect of the adjustment on vehicle performance characteristics and surveillance information from similar in-use vehicles.

(ii) For those vehicles parameters which the Administrator has not determined to be subject to adjustment during testing in accordance with § 86.1833–01(a)(1), the vehicle presented to the Administrator for testing shall be calibrated within the production tolerances applicable to the manufacturer's specifications to be shown on the vehicle label (see § 86.1807–01) as specified in the application for certification. If the Administrator determines that a vehicle is not within such tolerances, the vehicle will be adjusted, at the facility designated by the Administrator, prior to the test and an engineering report shall be submitted to the Administrator describing the corrective action taken. Based on the engineering report, the Administrator will determine if the vehicle will be used as an emission data vehicle.

(2) If the Administrator determines that the test data developed on an emission data vehicle under paragraph (a)(1) of this section would cause that vehicle to fail under the provisions of § 86.1841–01, then the following procedure shall be observed:

(i) The manufacturer may request a retest. Before the retest, those vehicle or engine parameters which the Administrator has not determined to be subject to adjustment for certification testing in accordance with § 86.1833–01(a)(1) may be readjusted to manufacturer's specification, if these adjustments were made incorrectly prior to the first test. The Administrator may adjust or cause to be adjusted any parameter which the Administrator has determined to be subject to adjustment to any setting within the physically adjustable range of that parameter, as determined by the Administrator in accordance with § 86.1833–01(a)(3). Other maintenance or repairs may be performed in accordance with § 86.1834–01. All work on the vehicle shall be done at such location and under such conditions as the Administrator may prescribe.

(ii) The vehicle will be retested by the Administrator and the results of this test shall comprise the official data for the emission-data vehicle.

(3) If sufficient durability data are not available at the time of any emission test conducted under paragraph (a)(1) of this section to enable the Administrator to

determine whether an emission-data vehicle would fail, the manufacturer may request a retest in accordance with the provisions of paragraph (a)(2) of this section. If the manufacturer does not promptly make such request, he shall be deemed to have waived the right to a retest. A request for retest must be made before the manufacturer removes the vehicle from the test premises.

(4) Retesting for fuel economy reasons may be conducted under the provisions of 40 CFR 600.008-01.

(b) *Manufacturer-conducted confirmatory testing.* (1) If the Administrator determines not to conduct a confirmatory test under the provisions of paragraph (a) of this section, manufacturers will conduct a confirmatory test at their facility after submitting the original test data to the Administrator whenever any of the following conditions exist:

(i) The vehicle configuration has previously failed an emission standard;

(ii) The test exhibits high emission levels determined by exceeding a percentage of the standards specified by the Administrator for that model year;

(iii) The fuel economy value of the test as measured in accordance with the procedures in 40 CFR Part 600 is higher than expected based on procedures approved by the Administrator;

(iv) The fuel economy value as measured in accordance with the procedures in Part 600 of this title, is close to a Gas Guzzler Tax threshold value based on tolerances established by the Administrator for that model year; or

(v) The fuel economy value as measured in accordance with the procedures in Part 600 of this title, is a potential fuel economy leader for a class of vehicles based on Administrator provided cut points for that model year.

(2) If the Administrator selects the vehicle for confirmatory testing based on the manufacturer's original test results, the testing shall be conducted as ordered by the Administrator. In this case, the manufacturer-conducted confirmatory testing specified under paragraph (b)(1) of this section would not be required.

(3) The manufacturer shall conduct a retest of the FTP or highway test if the difference between the fuel economy of the confirmatory test and the original manufacturer's test equals or exceeds three percent (or such lower percentage to be applied consistently to all manufacturer conducted confirmatory testing as requested by the manufacturer and approved by the Administrator).

(i) For use in the fuel economy program described in 40 CFR part 600, the manufacturer may, in lieu of

conducting a retest, accept as official the lower of the original and confirmatory test fuel economy results.

(ii) The manufacturer shall conduct a second retest of the FTP or highway test if the fuel economy difference between the second confirmatory test and the original manufacturer test equals or exceeds three percent (or such lower percentage as requested by the manufacturer and approved by the Administrator) and the fuel economy difference between the second confirmatory test and the first confirmatory test equals or exceeds three percent (or such lower percentage as requested by the manufacturer and approved by the Administrator). In lieu of conducting a second retest, the manufacturer may accept as official (for use in the fuel economy program) the lowest of the original test, the first confirmatory test, and the second confirmatory test fuel economy results.

(c) *Official test determination.* (1) Whenever the Administrator or the manufacturer conducts a confirmatory test segment on a test vehicle, the results of that test segment, unless subsequently invalidated by the Administrator, shall comprise the official data for that test segment for the vehicle at the prescribed test point and the manufacturer's original test data for that test segment for that prescribed test point shall not be used in determining compliance with emission standards.

(i) If the Administrator or the manufacturer conducts more than one passing, valid, confirmatory test, the results from the first passing, valid confirmatory test shall be considered official and used in determining compliance with emission standards.

(ii) Official test results for fuel economy purposes are determined in accordance with the provisions of 40 CFR 600.008-01.

(iii) The Administrator may stop a test after any evaporative test segment and use as official data any valid results obtained up to that point in the test, as described in subpart B of this part.

(2) Whenever the Administrator or the manufacturer does not conduct a confirmatory test on a test vehicle at a test point, the manufacturer's original test data will be accepted as the official data for that point.

(i) If the Administrator makes a determination based on testing under paragraph (a) of this section (or other appropriate correlation test data), that there is a lack of correlation between the manufacturer's test equipment or procedures and the test equipment or procedures used by the Administrator, no manufacturer's test data will be accepted for purposes of certification

until the reasons for the lack of correlation are determined and the validity of the data is established by the manufacturer.

(ii) If the Administrator has reasonable basis to believe that any test data submitted by the manufacturer is not accurate or has been obtained in violation of any provisions of this subpart, the Administrator may refuse to accept that data as the official data pending retesting or submission of further information.

(iii) If the manufacturer conducts more than one test on an emission data vehicle in the same configuration (excluding confirmatory tests run under paragraph (b) of this section), the data from the last test in that series of tests on that vehicle, will constitute the official data.

(d) Upon request of the manufacturer, the Administrator may issue a conditional certificate of conformity for a test group which has not completed the Administrator testing required under paragraph (b) of this section. Such a certificate will be issued based upon the condition that the confirmatory testing be completed in an expedited manner and that the results of the testing be in compliance with all standards and procedures.

(1) If, based on this testing or any other information, the Administrator later determines that the vehicles included in this test group do not meet the applicable standards, the Administrator will notify the manufacturer that the certificate is suspended. The certificate may be suspended in whole or in part as determined by the Administrator. Upon such a notification, the manufacturer must immediately cease the introduction of the affected vehicles into commerce. The manufacturer may request a hearing to appeal the Administrator's decision using the provisions of § 86.1853-01.

(2) Production of vehicles by a manufacturer under the terms of this paragraph (d) will be deemed to be a consent to recall all vehicles in the test group which the Administrator determines do not meet applicable standards, and to cause such nonconformity to be remedied at no expense to the owner.

**§ 86.1836-01 Manufacturer-supplied production vehicles for testing.**

Any manufacturer obtaining certification under this subpart shall supply to the Administrator, upon request, a reasonable number of production vehicles selected by the Administrator which are representative of the engines, emission control



systems, fuel systems, and transmission offered and typical of production models available for sale under the certificate. These vehicles shall be supplied for testing at such time and place and for such reasonable periods as the Administrator may require.

**§ 86.1837-01 Rounding of emission measurements.**

Unless otherwise specified, the results of all emission tests shall be rounded to the number of places to the right of the decimal point indicated by expressing the applicable emission standard of this subpart to one additional significant figure, in accordance with the Rounding-Off Method specified in ASTM E29-93a, Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications (incorporated by reference; see § 86.1).

**§ 86.1838-01 Small volume manufacturer certification procedures.**

(a) The small-volume manufacturers certification procedures described in paragraphs (b) and (c) of this section are optional. Small-volume manufacturers may use these optional procedures to demonstrate compliance with the general standards and specific emission requirements contained in this subpart.

(b) *Eligibility requirements.* (1) *Small volume manufacturers.* (i) The optional small-volume manufacturers certification procedures apply to light-duty vehicles and light-duty trucks, produced by manufacturers with U.S. sales, including all vehicles and engines imported under the provisions of 40 CFR 85.1505 and 85.1509 (for the model year in which certification is sought) of fewer than 15,000 units (light-duty vehicles, light-duty trucks, heavy-duty vehicles and heavy-duty engines combined).

(ii) If the aggregated U.S. sales of the manufacturer, as determined in paragraph (b)(3) of this section are fewer than 15,000 units, the manufacturer (or each manufacturer in the case of manufacturers in an aggregated relationship) may certify under the provisions of paragraph (c) of this section.

(2) *Small Volume Test Groups.* (i) If the aggregated U.S. sales of the manufacturer, as determined in paragraph (b)(3) of this section are equal to or greater than 15,000 units, then the manufacturer (or each manufacturer in the case of manufacturers in an aggregated relationship) will be allowed to certify a number of units under the small volume test group certification procedures in accordance with the

criteria identified in paragraphs (b)(2)(ii) through (iv) of this section.

(ii) If there are no additional manufacturers in an aggregated relationship meeting the provisions of paragraph (b)(3) of this section, then the manufacturer may certify whole test groups whose total aggregated sales (including heavy-duty engines) are less than 15,000 units using the small volume provisions of paragraph (c) of this section.

(iii) If there is an aggregated relationship with another manufacturer which satisfies the provisions of paragraph (b)(3) of this section, then the following provisions shall apply:

(A) If none of the manufacturers own 50 percent or more of another manufacturer in the aggregated relationship, then each manufacturer may certify whole test groups whose total aggregated sales (including heavy-duty engines) are less than 15,000 units using the small volume provisions of paragraph (c) of this section.

(B) If any of the manufacturers own 50 percent or more of another manufacturer in the aggregated relationship, then the limit of 14,999 units must be shared among the manufacturers in such a relationship. In total for all the manufacturers involved in such a relationship, aggregated sales (including heavy-duty engines) of up to 14,999 units may be certified using the small volume provisions of paragraph (c) of this section. Only whole test groups shall be eligible for small volume status under paragraph (c) of this section.

(iv) In the case of a joint venture arrangement (50/50 ownership) between two manufacturers, each manufacturer retains its eligibility for 14,999 units under the small-volume test group certification procedures, but the joint venture must draw its maximum 14,999 units from the units allocated to its parent manufacturers. Only whole test groups shall be eligible for small volume status under paragraph (c) of this section.

(3) *Sales Aggregation for Related Manufacturers.* The projected or actual sales from different firms shall be aggregated in the following situations:

(i) Vehicles and/or engines produced by two or more firms, one of which is 10 percent or greater part owned by another;

(ii) Vehicles and/or engines produced by any two or more firms if a third party has equity ownership of 10 percent or more in each of the firms;

(iii) Vehicles and/or engines produced by two or more firms having a common corporate officer(s) who is (are) responsible for the overall direction of the companies;

(iv) Vehicles and/or engines imported or distributed by all firms where the vehicles and/or engines are manufactured by the same entity and the importer or distributor is an authorized agent of the entity.

(c) Small-volume manufacturers and/or small volume test groups shall demonstrate compliance with the all applicable sections of this subpart except as provided in paragraphs (c)(1) and (2) of this section. Small volume manufacturers and/or test groups may optionally meet the following requirements:

(1) *Durability demonstration.* Use the provisions of § 86.1826-01 rather than the requirements of §§ 86.1823-01, 86.1824-01, and/or 86.1825-01.

(2) *In-Use Verification testing.* See § 86.1845-01 for applicability of in-use verification testing to small volume manufacturers and small volume test groups except as noted in this paragraph (c)(2).

(i) Small volume in-use verification test vehicles may be procured from customers or may be owned by, or under the control of the manufacturer, provided that the vehicle has accumulated mileage in typical operation on public streets and has received typical maintenance.

(ii) In lieu of procuring small volume in-use verification test vehicles that have a minimum odometer reading of 50,000 miles, a manufacturer may demonstrate to the satisfaction of the Agency that, based on owner survey data, the average mileage accumulated after 4 years for a given test group is less than 50,000 miles. The Agency may approve a lower minimum odometer reading based on such data.

(iii) The provision of § 86.1845-01(c)(2), which requires one vehicle of each test group during high mileage in-use verification testing to have a minimum odometer mileage of 75% of useful life, does not apply.

(iv) Manufacturers intending to use the provisions of paragraphs (c)(2)(i) or (ii) of this section shall submit to the Agency, prior to the certification of the subject vehicles, a plan detailing how these provisions will be met.

**§ 86.1839-01 Carryover of certification data.**

(a) In lieu of testing an emission-data or durability vehicle selected under § 86.1822-01, § 86.1828-01, or § 86.1829-01, and submitting data therefrom, a manufacturer may submit exhaust emission data, evaporative emission data and/or refueling emission data, as applicable, on a similar vehicle for which certification has been obtained or for which all applicable data

required under § 86.1845-01 has previously been submitted. To be eligible for this provision, the manufacturer must use good engineering judgment and meet the following criteria:

(1) In the case of durability data, the manufacturer must determine that the previously generated durability data represent a worst case or equivalent rate of deterioration for all applicable emission constituents compared to the configuration selected for durability demonstration.

(i) Prior to certification, the Administrator may require the manufacturer to provide data showing that the distribution of catalyst temperatures of the selected durability configuration is effectively equivalent or lower than the distribution of catalyst temperatures of the vehicle configuration which is the source of the previously generated data.

(ii) For the 2001, 2002, and 2003 model years only, paragraph (a)(1) of this section does not apply to the use of exhaust emission deterioration factors meeting the requirements of § 86.1823-01(c)(2).

(2) In the case of emission data, the manufacturer must determine that the previously generated emissions data represent a worst case or equivalent level of emissions for all applicable emission constituents compared to the configuration selected for emission compliance demonstration.

(b) In lieu of using newly aged hardware on an EDV as allowed under the provisions of § 86.1823-01(a)(3)(ii), a manufacturer may use similar hardware aged for an EDV previously submitted, provided that the manufacturer determines that the previously aged hardware represents a worst case or equivalent rate of deterioration for all applicable emission constituents for durability demonstration.

**§ 86.1840-01 Special test procedures.**

(a) The Administrator may, on the basis of written application by a manufacturer, prescribe test procedures, other than those set forth in this part, for any light-duty vehicle or light-duty truck which the Administrator determines is not susceptible to satisfactory testing by the procedures set forth in this part.

(b) If the manufacturer does not submit a written application for use of special test procedures but the Administrator determines that a light-duty vehicle or light-duty truck is not susceptible to satisfactory testing by the procedures set forth in this part, the Administrator shall notify the

manufacturer in writing and set forth the reasons for such rejection in accordance with the provisions of § 86.1848(a)(2).

**§ 86.1841-01 Compliance with emission standards for the purpose of certification.**

(a) Certification levels of a test vehicle will be calculated for each emission constituent applicable to the test group for both full and intermediate useful life as appropriate.

(1) If the durability demonstration procedure approved by the Administrator under the provisions of §§ 86.1823-01, 86.1824-01, or 86.1825-01 requires a DF to be calculated, the DF shall be applied to the official test results determined in § 86.1835-01(c) for each regulated emission constituent and for full and intermediate useful life, as appropriate, using the following procedures:

(i) For additive DF's, the DF will be added to the emission result. The sum will be rounded to the same level of precision as the standard for the constituent at full and/or intermediate useful life, as appropriate. This rounded sum is the certification level for that emission constituent and for that useful life mileage.

(ii) For multiplicative DFs, the DF will be multiplied by the emission result for each regulated constituent. The product will be rounded to the same level of precision as the standard for the constituent at full and intermediate useful life, as appropriate. This rounded product is the certification level for that emission constituent and for that useful life mileage.

(iii) For the SFTP composite standard of (NMHC+NO<sub>x</sub>), the measured results of NMHC and NO<sub>x</sub> must each be adjusted by their corresponding deterioration factors before the composite (NMHC+NO<sub>x</sub>) certification level is calculated.

(2) If the durability demonstration procedure approved by the Administrator under the provisions of § 86.1823-01, § 86.1824-01, or § 86.1825-01, as applicable, requires testing of the EDV with aged emission components, the official results of that testing determined under the provisions of § 86.1835-01(c) shall be rounded to the same level of precision as the standard for each regulated constituent at full and intermediate useful life, as appropriate. This rounded emission value is the certification level for that emission constituent at that useful life mileage.

(3) If the durability demonstration procedure approved by the Administrator under the provisions of

§ 86.1823-01 requires neither a DF calculation nor EDV testing with aged hardware, the certification levels shall be calculated in accordance with the provisions approved under § 86.1823-01(a)(3).

(4) The rounding required in paragraph (a) of this section shall be conducted in accordance with the provisions of § 86.1837-01.

(b) To be considered in compliance with the standards for the purposes of certification, the certification levels for the test vehicle calculated in paragraph (a) of this section shall be less than or equal to the standards for all emission constituents to which the test group is subject, at both full and intermediate useful life as appropriate for that test group.

(c) Every test vehicle of a test group must comply with all applicable exhaust emission standards before that test group may be certified.

(d) Every test vehicle of an evaporative/refueling family must comply with all applicable evaporative and/or refueling emission standards before that family may be certified.

**§ 86.1842-01 Addition of a vehicle after certification; and changes to a vehicle covered by certification.**

(a) *Addition of a car line after certification.* (1) If a manufacturer proposes to add to its product line a new car line of the same test group as vehicles previously certified but which was not described in the application for certification when the test vehicle(s) representing other vehicles of that combination was certified, it shall notify the Administrator. This notification shall include a full description of the vehicle to be added.

(2) The manufacturer shall perform such tests on the test vehicle(s) representing the vehicle to be added which would have been required if the vehicle had been included in the original application for certification.

(3) If, after a review of the test reports and data submitted by the manufacturer, and data derived from any testing conducted under § 86.1835-01, the Administrator determines that the test vehicle(s) or test engine(s) meets all applicable standards, the appropriate certificate will be amended accordingly. If the Administrator determines that the test vehicle(s) does not meet applicable standards, she/he will proceed under § 86.1850-01.

(b) *Changes to the configuration of vehicles covered by a Certificate of Conformity.* (1) A manufacturer will notify the Administrator concurrently with (or in advance of) any change or addition in production vehicles which

creates a new vehicle configuration within the car lines covered in a certified test group, giving a full description of the change. Such a change is referred to as a running change. Upon notification, the manufacturer may begin production of the running change if the manufacturer determines that following the change all affected vehicles will still meet the applicable emission standards.

(i) Such notification shall include a full description of the addition or change and any supporting documentation the manufacturer may desire to include to support the manufacturer's determination in accordance with § 86.1844-01.

(ii) The manufacturer's determination that the addition or change does not cause noncompliance shall be based on an engineering evaluation of the addition or change and/or testing.

(2) The Administrator may require that additional emission testing be performed to support the manufacturer's determination submitted in paragraph (b)(1) of this section. If additional testing is required the Administrator shall proceed in accordance with paragraph (a)(3) of this section. Additional test data, if requested, must be provided within 30 days of the request or the manufacturer must rescind the addition or change immediately. The Administrator may grant additional time to complete testing. If based on this additional testing or any other information, the Administrator determines that the vehicles affected by the addition or change do not meet the applicable standards the Administrator will notify the manufacturer to rescind the addition or change immediately upon receipt of the notification.

(c) Election to produce vehicles under this section will be deemed to be a consent to recall all vehicles which the Administrator determines under paragraph (a) or (b) of this section do not meet applicable standards, and to cause such nonconformity to be remedied at no expense to the owner.

**§ 86.1843-01 General information requirements.**

(a) A manufacturer must submit a separate Application for Certification (Application) for each durability group in a format approved by the Administrator and in multiple copies as designated by the Administrator. Any information within the Application which is unique to a specific test group must be submitted for each test group.

(b) Any manufacturer that fails to comply with any information requirements of §§ 86.1843-01 and

86.1844-01 may be subject to the following provisions:

(1) The Application (Part 1 and Part 2) and any additional information as designated by the Administrator shall be submitted for all durability groups prior to certification for subsequent model years, until otherwise notified by the Administrator. The Application shall be updated concurrently with every running change.

(2) Provisions of § 86.1850-01 may be imposed.

(3) Civil penalties and remedial action as applicable under the Clean Air Act may be imposed.

(c) *Part 1 of the Application.* Part 1, which shall include the items listed in § 86.1844-01(d), must be submitted to the Administrator before a certificate of conformity will be issued.

(d) *Part 2 of the Application.* Part 2, which shall include the items listed in § 86.1844-01(e), must be submitted to the Administrator by January 1st of the applicable model year. If a test group is certified less than 60 days prior to January 1st of the applicable model year, Part 2 must be submitted to the Administrator within 90 days of the effective date on the applicable certificate of conformity.

(e) *Running change submissions.* Each running change notification, as required under § 86.1842-01, must include the information listed in § 86.1844-01(f) and shall be submitted to the Administrator concurrently with, or in advance of, the implementation of any change incorporated onto production vehicles.

(f) *Updates to the Application for Certification.* (1) The manufacturer must submit an update to the Part 1 Application by January 1st of the applicable model year to incorporate any running changes and/or corrections which occurred after certification. If a test group is certified less than 60 days prior to January 1st of the applicable model year, this update may be submitted to the Administrator within 90 days of the effective date on the applicable certificate of conformity.

(2) The manufacturer must submit a final update to Part 1 and Part 2 of the Application by January 1st of the subsequent model year to incorporate any applicable running changes or corrections which occurred between January 1st of the applicable model year and the end of the model year. A manufacturer may request the Administrator to grant an extension (of no more than 90 days) for submittal of the final update. The request must clearly indicate the circumstances necessitating the extension.

(3) The manufacturer may not use updates to its application to correct a misbuild situation with respect to vehicles already introduced into commerce.

(g) *Information to be submitted upon request.* Upon written request by the Administrator, a manufacturer shall submit any information as described in § 86.1844-01 within 15 business days. A manufacturer may request the Administrator to grant an extension. The request must clearly indicate the circumstances necessitating the extension.

(h) *In-use information requirements.* All information requirements of the in-use verification and confirmatory programs of §§ 86.1845-01 and 86.1846-01 must be met by the due dates listed in § 86.1847-01.

**§ 86.1844-01 Information requirements: Application for certification and submittal of information upon request.**

(a) All information listed in this section must be submitted to the Agency according to the requirements specified in § 86.1843-01.

(b) Nothing in this section limits the Administrator's discretion to require the manufacturer to submit additional records not specifically required by this section.

(c) Routine emission test records shall be retained by the manufacturer for a period of one (1) year after issuance of all certificates of conformity to which they relate. All records, other than routine emission test records, required to be produced by the manufacturer under this title shall be made available upon written request by the Administrator for a period of eight years after issuance of all certificates of conformity to which they relate.

(d) *Part 1 Application.* Part 1 must contain the following items:

(1) Correspondence and communication information, such as names, mailing addresses, phone and fax numbers, and e-mail addresses of all manufacturer representatives authorized to be in contact with EPA compliance staff. The address where official documents, such as certificates of conformity, are to be mailed must be clearly identified. At least one U.S. contact must be provided.

(2) A description of the durability group in accordance with the criteria listed in § 86.1820-01, or as otherwise used to group a product line.

(3) A description of applicable evaporative/refueling families in accordance with the criteria listed in § 86.1821-01, or as otherwise used to group a product line.

(4) A description of the test procedures used to establish durability and exhaust and evaporative/refueling emission deterioration factors as required to be determined and supplied in §§ 86.1823-01, 86.1824-01 and 86.1825-01 when applicable.

(5) A description of each test group in accordance with the criteria listed in § 86.1827-01 or as otherwise used to group a product line.

(6) Identification and description of all vehicles for which testing is required by §§ 86.1822-01 and 86.1828-01 to obtain a certificate of conformity.

(7) A comprehensive list of all test results, including official certification levels, and the applicable intermediate and full useful life emission standards to which the test group is to be certified as required in § 86.1829-01.

(8) A statement that all applicable vehicles will conform with the emission standards for which emission data is not being provided, as allowed under § 86.1829-01. The statement shall clearly identify the standards for which emission testing was not completed.

(9) Information which describes each emission control diagnostic system required by § 86.1806-01 including:

(i) A description of the functional operation characteristics of the diagnostic system;

(ii) The general method of detecting malfunctions for each emission-related powertrain component;

(iii) Any deficiencies, including resolution plans and schedules.

(10) A description of all flexible or dedicated alternate fuel vehicles including, but not limited to, the fuel and/or percentage of alternate fuel for all such vehicles.

(11) A list of all auxiliary emission control devices (AECD) installed on any applicable vehicles, including a justification for each AECD, the parameters they sense and control, a detailed justification of each AECD which results in a reduction in effectiveness of the emission control system, and rationale for why the AECD is not a defeat device as defined under § 86.1809-01.

(12) Identification and description of all vehicles covered by each certificate of conformity to be produced and sold within the U.S. The description must be sufficient to identify whether any given in-use vehicle is, or is not, covered by a given certificate of conformity, the test group and the evaporative/refueling family to which it belongs and the standards that are applicable to it, by matching readily observable vehicle characteristics and information given in the emission control information label (and other permanently attached labels)

to indicators in the Part 1 Application. In addition, the description must be sufficient to determine for each vehicle covered by the certificate, all appropriate test parameters and any special test procedures necessary to conduct an official certification exhaust or evaporative emission test as was required by this subpart to demonstrate compliance with applicable emission standards. The description shall include, but is not limited to, information such as model name, vehicle classification (LDV or LDT), sales area, engine displacement, engine code, transmission type, tire size and parameters necessary to conduct exhaust emission tests such as equivalent test weight, curb and gross vehicle weight, test horsepower (with and without air conditioning adjustment), coast down time, shift schedules, cooling fan configuration, etc and evaporative tests such as canister working capacity, canister bed volume and fuel temperature profile. The Part 1 may include ranges for test parameters in lieu of actual values.

(13) Projected U.S. vehicle sales volumes for each test group and evaporative/refueling family combination organized in such a way to determine projected compliance with any applicable implementation schedules or minimum sales requirements as specified in § 86.1810 or as otherwise required by this chapter.

(14) A request for a certificate of conformity for each test group after all required testing has been completed. The request must be signed by an authorized manufacturer representative and include a statement that the test group complies with all applicable regulations contained within this chapter.

(e) *Part 2 Application.* Part 2 must contain the following items:

(1) A list of part numbers of all emission-related components and AECDs for each emission control system, including those found on actual components. The part numbers shall be organized by engine code or other similar classification scheme.

(2) Basic calibration information, organized by engine code (or other similar classification scheme), for the major components of the fuel system, EGR system, ignition system, oxygen sensor(s) and thermostat. Examples of major components and associated calibration information include, but are not limited to; fuel pump and fuel pump flow rate, fuel pressure regulator and regulated fuel pressure, EGR valve and EGR exhaust gas flow rate at specified vacuum levels, EGR vacuum regulator and regulated vacuum, EGR orifice and

orifice diameter, basic engine timing, timing RPM, idle rpm, spark plug gap, oxygen sensor output (mV), and thermostat opening temperature.

(3) Identification and description of all vehicles covered by each certificate of conformity to be produced and sold within the U.S. The description must be sufficient to identify whether any given in-use vehicle is, or is not, covered by a given certificate of conformity, the test group and the evaporative/refueling family to which it belongs and the standards that are applicable to it, by matching readily observable vehicle characteristics and information given in the emission control information label (and other permanently attached labels) to indicators in the Part 1 Application.

In addition, the description must be sufficient to determine for each vehicle covered by the certificate, all appropriate test parameters and any special test procedures necessary to conduct an official certification exhaust or evaporative emission test as was required by this subpart to demonstrate compliance with applicable emission standards. The description shall include, but is not limited to, information such as model name, vehicle classification (LDV or LDT), sales area, engine displacement, engine code, transmission type, tire size and parameters necessary to conduct exhaust emission tests such as equivalent test weight, curb and gross vehicle weight, test horsepower (with and without air conditioning adjustment), coast down time, shift schedules, cooling fan configuration, etc and evaporative tests such as canister working capacity, canister bed volume and fuel temperature profile. Actual values must be provided for all parameters.

(4) Final U.S. vehicle sales volumes for each test group and evaporative/refueling family combination organized in such a way to verify compliance with any applicable implementation schedules. Final sales are not required until the final update to the Part 2 Application at the end of the model year.

(i) The manufacturer may petition the Administrator to allow actual volume produced for U.S. sale to be used in lieu of actual U.S. sales. The petition must establish that production volume is functionally equivalent to sales volume.

(ii) The U.S. sales volume 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.

(5) Copies of all service manuals, service bulletins and instructions regarding the use, repair, adjustment,

maintenance, or testing of such vehicles relevant to the control of crankcase, exhaust or evaporative emissions, as applicable, issued by the manufacturer (in written or electronic form) for use by other manufacturers, assembly plants, distributors, dealers, and ultimate purchasers. These shall be submitted to the Agency when they are made available to the public and must be updated as appropriate throughout the useful life of the corresponding vehicles.

(f) Running change submissions. A manufacturer shall submit to the Administrator a notification of all running changes as required in accordance with §§ 86.1842-01 and 86.1843-01 at the time each change is incorporated into production. Each running change notification shall include:

- (1) A detailed description of the change;
  - (2) The reason for the change;
  - (3) The portion of the product line that is affected by the change, including information sufficient to identify whether any given in-use vehicle includes the change;
  - (4) The effect the change will have on emissions;
  - (5) Any test data that is determined to be necessary to demonstrate compliance with applicable emission standards; and
  - (6) A summary report for each test group which provides an overview of all running changes that have been incorporated since certification.
- (g) The manufacturer shall provide the following information, or other information as deemed necessary by the Administrator, to the Agency upon written request by the Administrator. This includes any information, or explanations of such information specified in paragraphs (d), (e), and (f) of this section.

(1) A detailed description of the basis for all good engineering judgment decisions that were required to be made by the manufacturer. These include, but are not limited to, placement of vehicles into durability and test groups, the appropriateness of a durability process for future model years, worst-case vehicle selections for durability and emission data purposes, and carry-over or carry-across of emission test data.

(2) The basis used for all compliance statements submitted under this section. Each statement must be supported by the manufacturer using good engineering judgment and should include any emission test data, development test data, or other supporting information deemed necessary. This includes information necessary to demonstrate compliance

with any emission standards for which a compliance statement was submitted in lieu of actual emission test data as allowed under § 86.1810.

(3) Detailed technical descriptions of emission-related components and AECs, including schematic diagrams and hose and wire routings which describe the fundamental operating characteristics of each emission control system.

(4) Detailed calibration specifications for all emission-related components and AECs.

(5) Any information necessary to demonstrate that no defeat devices are present on any vehicles covered by a certificate including, but not limited to, a description of the technology employed to control CO emissions at intermediate temperatures.

(6) The following information describing any adjustable parameters:

(i) 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;

(ii) 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;

(iii) 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;

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

(v) The specifications used during all emission testing required by this subpart.

(7) A history of each motor vehicle used for certification testing, including a general description of the buildup of the vehicle and engine. Each history shall begin when any of the selection or buildup activities occur and should include details of the use of the vehicle for development testing. Each history must include a description of the origin and selection process for fuel system components, fuel injection components and emission control system components and specify the steps taken to assure that the certification vehicle will be representative of production vehicles.

(8) A record of all emission tests performed on all durability and emission data vehicles required to be tested by this subpart including test results, the date and purpose of each

test, and the number of miles accumulated on the vehicle.

(9) A record and description of any significant events (including extraordinary events such as vehicle accidents or dynamometer runaway) affecting any certification test vehicle, including all maintenance, servicing or tests performed to diagnose engine or emission control system performance. The date and time of each event and an explanation must be included.

(10) For vehicles with non-integrated refueling emission control systems, a description of the drivedown used to purge the refueling canister and a description of the procedures used to determine the number of equivalent UDDS cycles required to purge the refueling canisters, as determined from the fuel economy on the UDDS applicable to the test vehicle of that evaporative/refueling family and emission control system combination required to use a volume of fuel equal to 85% of fuel tank volume and from subpart B of this part.

(11) A description of all procedures, including any special procedures, used to comply with applicable test requirements of this subpart. Any special procedures used to establish durability data or emission deterioration factors required to be determined under §§ 86.1823-01, 86.1824-01 and 86.1825-01 and to conduct emission tests required to be performed on applicable emission data vehicles under § 86.1829-01 according to test procedures contained within this Title must also be included.

(12) A description of any unique procedures required to perform evaporative/refueling emission tests for all vehicles in each evaporative/refueling family and a description of the method used to develop those unique procedures, including canister working capacity, canister bed volume and fuel temperature profile for the running loss test.

(13) A description of the method to be used to decode vehicle identification numbers.

(h) *In-use information requirements.* Manufacturers must submit the information required in § 86.1847-01.

#### **§ 86.1845-01 Manufacturer in-use verification testing requirements.**

(a) *General requirements.* A manufacturer of light-duty vehicles and light-duty trucks shall test, or cause to have tested a specified number of light-duty vehicles and light-duty trucks. Such testing shall be conducted in accordance with the provisions of this section. For purposes of this section, the

term vehicle shall include light-duty vehicles and light-duty trucks.

(b) *Low mileage testing.* [Reserved].

(c) *High-mileage testing.* (1) Test Groups. Testing must be conducted for each test group.

(2) Vehicle mileage: All test vehicles must have a minimum odometer mileage of 50,000 miles. At least one vehicle of each test group must have a minimum odometer mileage of 75% of useful life. See § 86.1838-01(c)(2) for small volume manufacturer mileage requirements.

(3) Number of test vehicles. For each test group, the minimum number of vehicles that must be tested is specified in Table S01-06 and Table S01-07 of this paragraph (c)(3). After testing the minimum number of vehicles of a

specific test group as specified in Table S01-06 and Table S01-07 of this paragraph (c)(3), a manufacturer may test additional vehicles upon request and approval by the Agency prior to the initiation of the additional testing. Any additional testing must be completed within the testing completion requirements shown in § 86.1845-01(c)(4). The request and Agency approval (if any) shall apply to test groups on a case by case basis and apply only to testing under this paragraph. In addition to the testing specified in Table S01-06 and Table S02-07 of this paragraph (c)(3), a manufacturer shall test one vehicle from each evaporative/refueling family for evaporative/refueling emissions. If a manufacturer believes it is unable to procure the test

vehicles necessary to test the required number of vehicles in a test group as specified in Table S01-06 or Table S01-07 of this paragraph (c)(3), the manufacturer may request, subject to Administrator approval, a decreased sample size for that test group. The request shall include a description of the methods the manufacturer has used to procure the required number of vehicles. The approval of any such request, and the substitution of an alternative sample size requirement for the test group, will be based on a review of the procurement efforts made by the manufacturer to determine if all reasonable steps have been taken to procure the required test group size. Tables S01-06 and S01-07 follow:

TABLE S01-06.—SMALL VOLUME MANUFACTURERS

49 and 50 State total sales <sup>1</sup>	1-5000	5001-14,999
High Mileage .....	Voluntary .....	2

<sup>1</sup> Manufacturer's total annual sales.

TABLE S01-07.—LARGE VOLUME MANUFACTURERS

49 and 50 State annual sales <sup>1</sup>	1-5000 <sup>2</sup>	5001-14,999 <sup>2</sup>	1-50,000 <sup>3</sup>	50,001-250,000	>250,000
High Mileage .....	Voluntary .....	2	4	5	6

<sup>1</sup> Sales by test group.

<sup>2</sup> Total annual production of groups eligible for testing under small volume sampling plan is capped at a maximum of 14,999 vehicle 49 or 50 state annual sales, or a maximum of 4,500 vehicle California only sales per model year, per large volume manufacturer.

<sup>3</sup> Sampling plan applies to all of a manufacturer's remaining groups in this sales volume category when the maximum annual cap on total sales of small groups eligible for the small volume sampling plan is exceeded.

(4) Initiation and completion of testing. Testing of a test group (or evaporative refueling family) must commence within 4 years of the end of production of the test group (or evaporative/refueling family) and be completed within 5 years of the end of production of the test group (or evaporative/refueling family).

(5) Emission testing. (i) Each test vehicle shall be tested in accordance with the Federal Test Procedure and the US06 portion of the Supplemental Federal Test Procedure as described in subpart B of this part, when such test vehicle is tested for compliance with applicable exhaust emission standards under this subpart. The US06 portion of the SFTP is not required to be performed on vehicles certified in accordance with the National LEV provisions of subpart R of this part. One test vehicle from each test group shall receive a Federal Test Procedure at high altitude. The test vehicle tested at high altitude is not required to be one of the same test vehicles tested at low altitude. The test vehicle tested at high altitude

is counted when determining the compliance with the requirements shown in Table S01-06 and Table S01-07 in paragraph (c)(3) of this section or the expanded sample size as provided for in this paragraph (c).

(ii) One test vehicle of each evaporative/refueling family shall be tested in accordance with the evaporative emission and refueling emission test procedures described in subpart B of this part, when such test vehicle is tested for compliance with applicable evaporative emission and refueling emission standards under this subpart. The test vehicles tested to fulfill the evaporative/refueling testing requirement of this paragraph (c)(5)(ii) will be counted when determining compliance with the minimum number of vehicles as specified in Table S01-06 and Table S01-07 in paragraph (c)(3) of this section for testing under paragraph (b)(5)(i) of this section only if the vehicle is also tested for exhaust emissions under the requirements of paragraph (b)(5)(i) of this section.

(6) Each test vehicle not rejected based on the criteria specified in

Appendix II to this Subpart shall be tested in as-received condition.

(7) A manufacturer may conduct subsequent diagnostic maintenance and/or testing on any vehicle. Any such maintenance and/or testing shall be reported to the Agency as specified in § 86.1847-01.

(d) Test vehicle procurement. (1) Vehicles tested under this section shall be procured pursuant to the provisions of this paragraph (d). Vehicles shall be procured from the group of persons who own or lease vehicles registered in the procurement area.

(2) Vehicles shall be procured from persons which own or lease the vehicle, excluding commercial owners/lessees which are owned or controlled by the vehicle manufacturer, using the procedures described in Appendix I to this subpart. See § 86.1838(c)(2)(i) for small volume manufacturer requirements.

(3) Geographical limitations. (i) Test groups certified to 50-state standards: For low altitude testing no more than fifty percent of the test vehicles may be procured from California. The test

vehicles procured from the 49 state area must be procured from a location with a heating degree day 30 year annual average equal to or greater than 4000.

(ii) Test groups certified to 49 state standards: The test vehicles procured from the 49 state area must be procured from a location with a heating degree day 30 year annual average equal to or greater than 4000.

(iii) Vehicles procured for high altitude testing may be procured from any area located above 4000 feet.

(4) Vehicles may be rejected for procurement or testing under this section if they meet one or more of the rejection criteria in Appendix II of this subpart. Vehicles may also be rejected after testing under this section if they meet one or more of the rejection criteria in Appendix II of this subpart. Any vehicle rejected after testing must be replaced in order that the number of test vehicles in the sample comply with the sample size requirements of this section. Any post-test vehicle rejection and replacement procurement and testing must take place within the testing completion requirements of this section.

(e) *Testing facilities, procedures, quality assurance and quality control.* (1) Lab equipment and procedural requirements. The manufacturer shall utilize a test laboratory that is in accordance with the equipment and procedural requirements of subpart B to conduct the testing required by this section.

(2) The manufacturer shall notify the Agency of the name and location of the testing laboratory(s) to be used to conduct testing of vehicles of each model year conducted pursuant to this section. Such notification shall occur at least thirty working days prior to the initiation of testing of the vehicles of that model year.

(3) Correlation. The manufacturer shall document correlation traceable to the Environmental Protection Agency's National Vehicle and Fuel Emission Laboratory for its test laboratory utilized to conduct the testing required by this section.

**§ 86.1845-04 Manufacturer in-use verification testing requirements.**

(a) *General requirements.* A manufacturer of light-duty vehicles and light-duty trucks shall test, or cause to have tested a specified number of light-duty vehicles and light-duty trucks. Such testing shall be conducted in accordance with the provisions of this section. For purposes of this section, the term vehicle shall include light-duty vehicles and light-duty trucks.

(b) *Low-mileage testing.* (1) Test Groups. Testing must be conducted for each test group.

(2) Vehicle mileage. All test vehicles must have a minimum odometer mileage of 10,000 miles.

(3) Number of test vehicles. For each test group, the minimum number of vehicles that must be tested is specified in Table S04-06 and Table S04-07 of this paragraph (b)(3). After testing the minimum number of vehicles of a

specific test group as specified in Table S04-06 or S04-07 of this paragraph (b)(3), a manufacturer may test additional vehicles upon request and approval by the Agency prior to the initiation of the additional testing. Any additional testing must be completed within the testing completion requirements shown in § 86.1845-04(b)(4). The request and Agency approval (if any) shall apply to test groups on a case by case basis and apply only to testing under this paragraph. Separate approval will be required to test additional vehicles under paragraph (c) of this section. In addition to the testing specified in Table S04-06 and Table S04-07 of this paragraph (b)(3), a manufacturer shall test one vehicle from each evaporative/refueling family for evaporative/refueling emissions. If a manufacturer believes it is unable to procure the test vehicles necessary to test the required number of vehicles in a test group, the manufacturer may request, subject to Administrator approval, a decreased sample size for that test group. The request shall include a description of the methods the manufacturer has used to procure the required number of vehicles. The approval of any such request, and the substitution of an alternative sample size requirement for the test group, will be based on a review of the procurement efforts made by the manufacturer to determine if all reasonable steps have been taken to procure the required test group size. Tables S04-06 and S04-07 follow:

TABLE S04-06.—SMALL VOLUME MANUFACTURERS

49 and 50 State total sales <sup>1</sup>	1-5000	5001-14,999
Low Mileage .....	Voluntary .....	0
High Mileage .....	Voluntary .....	2

<sup>1</sup> Manufacturer's total annual sales.

TABLE S04-07.—LARGE VOLUME MANUFACTURERS

49 and 50 State annual sales <sup>1</sup>	1-5000 <sup>2</sup>	5001-14,999 <sup>2</sup>	1-50,000 <sup>3</sup>	50,001-250,000	>250,000
Low Mileage .....	Voluntary .....	0	2	3	4
High Mileage .....	Voluntary .....	2	4	5	6

<sup>1</sup> Sales by test group.

<sup>2</sup> Total annual production of groups eligible for testing under small volume sampling plan is capped at a maximum of 14,999 vehicle 49 or 50 state annual sales, or a maximum of 4,500 vehicle California only sales per model year, per large volume manufacturer.

<sup>3</sup> Sampling plan applies to all of a manufacturer's remaining groups in this sales volume category when the maximum annual cap on total sales of small groups eligible for the small volume sampling plan is exceeded.

(4) Completion of testing. Testing of the vehicles in a test group and evaporative/refueling family must be completed within one year of the end of production of that test group (or

evaporative/refueling family) for that model year.

(5) *Emission testing.* (i) Each test vehicle of a test group shall be tested in accordance with the Federal Test Procedure and the US06 portion of the

Supplemental Federal Test Procedure as described in subpart B of this part, when such test vehicle is tested for compliance with applicable exhaust emission standards under this subpart.



(ii) One test vehicle of each evaporative/refueling family shall be tested in accordance with the evaporative emission and refueling emission test procedures described in subpart B of this part, when such test vehicle is tested for compliance with applicable evaporative emission and refueling emission standards under this subpart. The test vehicles tested to fulfill the evaporative/refueling testing requirement of this paragraph (b)(5)(ii) will be counted when determining compliance with the minimum number of vehicles as specified in Table S04-06 and Table S04-07 in paragraph (b)(3) of this section for testing under paragraph (b)(5)(i) of this section only if the vehicle is also tested for exhaust emissions under the requirements of paragraph (b)(5)(i) of this section.

(6) Each test vehicle not rejected based on the criteria specified in Appendix II to this Subpart shall be tested in as-received condition.

(7) A manufacturer may conduct subsequent diagnostic maintenance and/or testing of any vehicle. Any such maintenance and/or testing shall be reported to the Agency as specified in § 86.1847-01.

(c) *High-mileage testing.* (1) Test Groups. Testing must be conducted for each test group.

(2) Vehicle mileage: All test vehicles must have a minimum odometer mileage of 50,000 miles. At least one vehicle of each test group must have a minimum odometer mileage of 75% of useful life. See § 86.1838-01(c)(2) for small volume manufacturer mileage requirements.

(3) Number of test vehicles. For each test group, the minimum number of vehicles that must be tested is specified in Table S04-06 and Table S04-07 in paragraph (b)(3) of this section. After testing the minimum number of vehicles of a specific test group as specified in Table S04-06 and Table S04-07 in paragraph (b)(3) of this section, a manufacturer may test additional vehicles upon request and approval by the Agency prior to the initiation of the additional testing. Any additional testing must be completed within the testing completion requirements shown in § 86.1845-04(c)(4). The request and Agency approval (if any) shall apply to test groups on a case by case basis and apply only to testing under this paragraph (c). In addition to the testing specified in Table S04-06 and Table S04-07 in paragraph (b)(3) of this section, a manufacturer shall test one vehicle from each evaporative/refueling family for evaporative/refueling emissions. If a manufacturer believes it is unable to procure the test vehicles

necessary to test the required number of vehicles in a test group as specified in Table S04-06 or Table S04-07 in paragraph (b)(3) of this section, the manufacturer may request, subject to Administrator approval, a decreased sample size for that test group. The request shall include a description of the methods the manufacturer has used to procure the required number of vehicles. The approval of any such request, and the substitution of an alternative sample size requirement for the test group, will be based on a review of the procurement efforts made by the manufacturer to determine if all reasonable steps have been taken to procure the required test group size.

(4) Initiation and completion of testing. Testing of a test group (or evaporative/refueling family) must commence within 4 years of the end of production of the test group (or evaporative/refueling family) and be completed within 5 years of the end of production of the test group (or evaporative/refueling family).

(5) Emission testing. (i) Each test vehicle shall be tested in accordance with the Federal Test Procedure and the US06 portion of the Supplemental Federal Test Procedure as described in subpart B of this part, when such test vehicle is tested for compliance with applicable exhaust emission standards under this subpart. The US06 portion of the SFTP is not required to be performed on vehicles certified in accordance with the National LEV provisions of subpart R of this part. One test vehicle from each test group shall receive a Federal Test Procedure at high altitude. The test vehicle tested at high altitude is not required to be one of the same test vehicles tested at low altitude. The test vehicle tested at high altitude is counted when determining the compliance with the requirements shown in Table S04-06 and Table S04-07 in paragraph (b)(3) of this section or the expanded sample size as provided for in this paragraph (c).

(ii) One test vehicle of each evaporative/refueling family shall be tested in accordance with the evaporative emission and refueling emission test procedures described in subpart B of this part, when such test vehicle is tested for compliance with applicable evaporative emission and refueling emission standards under this subpart. The test vehicles tested to fulfill the evaporative/refueling testing requirement of this paragraph (b)(5)(ii) will be counted when determining compliance with the minimum number of vehicles as specified in Table S04-06 and table S04-07 in paragraph (b)(3) of this section for testing under paragraph

(b)(5)(i) of this section only if the vehicle is also tested for exhaust emissions under the requirements of paragraph (b)(5)(i) of this section.

(6) Each test vehicle not rejected based on the criteria specified in Appendix II to this subpart shall be tested in as-received condition.

(7) A manufacturer may conduct subsequent diagnostic maintenance and/or testing on any vehicle. Any such maintenance and/or testing shall be reported to the Agency as specified in § 86.1847-01.

(d) Test vehicle procurement.

(1) Vehicles tested under this section shall be procured pursuant to the provisions of this paragraph (d). Vehicles shall be procured from the group of persons who own or lease vehicles registered in the procurement area.

(2) Vehicles shall be procured from persons which own or lease the vehicle, excluding commercial owners/lessees which are owned or controlled by the vehicle manufacturer, using the procedures described in Appendix I to this subpart. See § 86.1838(c)(2)(i) for small volume manufacturer requirements.

(3) Geographical limitations. (i) Test groups certified to 50-state standards: For low altitude testing no more than fifty percent of the test vehicles may be procured from California. The test vehicles procured from the 49 state area must be procured from a location with a heating degree day 30 year annual average equal to or greater than 4000.

(ii) Test groups certified to 49 state standards: The test vehicles procured from the 49 state area must be procured from a location with a heating degree day 30 year annual average equal to or greater than 4000.

(iii) Vehicles procured for high altitude testing may be procured from any area located above 4000 feet.

(4) Vehicles may be rejected for procurement or testing under this section if they meet one or more of the rejection criteria in Appendix II to this subpart. Vehicles may also be rejected after testing under this section if they meet one or more of the rejection criteria in Appendix II to this subpart. Any vehicle rejected after testing must be replaced in order that the number of test vehicles in the sample comply with the sample size requirements of this section. Any post-test vehicle rejection and replacement procurement and testing must take place within the testing completion requirements of this section.

(e) *Testing facilities, procedures, quality assurance and quality control.*

(1) Lab equipment and procedural

requirements. The manufacturer shall utilize a test laboratory that is in accordance with the equipment and procedural requirements of subpart B of this part to conduct the testing required by this section.

(2) The manufacturer shall notify the Agency of the name and location of the testing laboratory(s) to be used to conduct testing of vehicles of each model year conducted pursuant to this section. Such notification shall occur at least thirty working days prior to the initiation of testing of the vehicles of that model year.

(3) Correlation. The manufacturer shall document correlation traceable to the Environmental Protection Agency's National Vehicle and Fuel Emission Laboratory for its test laboratory utilized to conduct the testing required by this section.

**§ 86.1846-01 Manufacturer in-use confirmatory testing requirements.**

(a) General requirements. A manufacturer of light-duty vehicles and/or light-duty trucks shall test, or cause testing to be conducted, under this section when the emission levels shown by a test group sample from testing under § 86.1845-01 exceeds the criteria specified in paragraph (b) of this section. The testing required under this section applies separately to each test group and at each test point (low and high mileage) that meets the specified criteria. The testing requirements apply separately for each model year, starting with model year 2001.

(b) Criteria for additional testing. A manufacturer shall test a test group or a subset of a test group as described in paragraph (j) of this section when the results from testing conducted under § 86.1845-01 show mean emissions for that test group of any pollutant(s) to be equal to or greater than 1.30 times the applicable in-use standard and a failure rate, among the test group vehicles, for the corresponding pollutant(s) of fifty percent or greater.

(1) This requirement does not apply to Supplemental FTP testing conducted under § 86.1845(b)(5)(i) or evaporative/refueling testing conducted under § 86.1845-01. Testing conducted at high altitude under the requirements of § 86.1845-01 will be included in determining if a test group meets the criteria triggering testing required under this section.

(2) The vehicle tested under the requirements of § 86.1845-01(c)(2)(i) with a minimum odometer miles of 75% of useful life will not be included in determining if a test group meets the triggering criteria.

(3) The SFTP composite emission levels shall include the IUVP FTP emissions, the IUVP US06 emissions, and the values from the SC03 Air Conditioning EDV certification test (without DFs applied). The calculations shall be made using the equations prescribed in § 86.164-01. If more than one set of certification SC03 data exists (due to running change testing or other reasons), the manufacturer shall choose the SC03 result to use in the calculation from among those data sets using good engineering judgment.

(c) Vehicles tested under the provisions of this section must be within the useful life specified for the emission standards which were exceeded in the testing under § 86.1845-01. Testing should be within the useful life specified, subject to sections 207(c)(5) and (c)(6) of the Clean Air Act where applicable.

(d) Number of test vehicles. A manufacturer must test a minimum of ten vehicles of the test group or Agency-designated subset. A manufacturer may, at the manufacturer's discretion, test more than ten vehicles under this paragraph for a specific test group or Agency-designated subset. If a manufacturer chooses to test more than the required ten vehicles, all testing must be completed within the time designated in the testing completion requirements of § 86.1846-01(g). Any vehicles which are eliminated from the sample either prior to or subsequent to testing, or any vehicles for which test results are determined to be void, must be replaced in order that the final sample of vehicles for which test results acceptable to the Agency are available equals a minimum of ten vehicles. A manufacturer may cease testing with a sample of five vehicles if the results of the first five vehicles tested show mean emissions for each pollutant to be less than 75.0 percent of the applicable standard, with no vehicles exceeding the applicable standard for any pollutant.

(e) Emission testing. Each test vehicle of a test group or Agency-designated subset shall be tested in accordance with the Federal Test Procedure and/or the Supplemental Federal Test Procedure (whichever of these tests performed under § 86.1845-01 produces emission levels requiring testing under this section) as described in subpart B of this part, when such test vehicle is tested for compliance with applicable exhaust emission standards under this subpart.

(f) Geographical limitations. (1) Test groups or Agency-designated subsets certified to 50-state standards: For low altitude testing no more than 50 percent

of the test vehicles may be procured from California. The test vehicles procured from the 49 state area must be procured from a location with a heating degree day 30 year annual average equal to or greater than 4000.

(2) Test groups or Agency-designated subsets certified to 49 state standards: For low-altitude testing all vehicles shall be procured from a location with a heating degree day 30 year annual average equal to or greater than 4000.

(3) Vehicles procured for high altitude testing may be procured from any area provided that the vehicle's primary area of operation was above 4000 feet.

(g) Testing required under this section must commence within three months of completion of the testing under § 86.1845-01 which triggered the confirmatory testing and must be completed within seven months of the completion of the testing which triggered the confirmatory testing. Any industry review of the results obtained under § 86.1845-01 and any additional vehicle procurement and/or testing which takes place under the provisions of § 86.1845-01 which the industry believes may affect the triggering of required confirmatory testing must take place within the three month period. The data and the manufacturers reasoning for reconsideration of the data must be provided to the Agency within the three month period.

(h) Limit on manufacturer conducted testing. For each manufacturer, the maximum number of test group(s) (or Agency-designated subset(s)) of each model year for which testing under this section shall be required is limited to 50 percent of the total number of test groups of each model year required to be tested by each manufacturer as prescribed in § 86.1845-01 rounded to the next highest whole number where appropriate. For each manufacturer with only one test group under § 86.1845-01, such manufacturer shall have a maximum potential testing requirement under this section of one test group (or Agency-designated subset) per model year.

(i) Prior to beginning in-use confirmatory testing the manufacturer must, after consultation with the Agency, submit a written plan describing the details of the vehicle procurement, maintenance, and testing procedures (not otherwise specified by regulation) it intends to use.

(j) EPA may designate a subset of the test group based on transmission type for testing under this section in lieu of testing the entire test group when the results for the entire test group from testing conducted under § 86.1845-01 show mean emissions and a failure rate

which meet these criteria for additional testing.

**§ 86.1847-01 Manufacturer in-use verification and in-use confirmatory testing; submittal of information and maintenance of records.**

(a) The manufacturer who conducts or causes to be conducted testing of any motor vehicle under § 86.1845-01 shall establish, maintain and retain the following records organized and indexed by test group and evaporative/refueling family:

(1) A record documenting correlation as prescribed by § 86.1845-01(e)(3).

(2) A description of all laboratory equipment calibrations and verifications as prescribed by subpart B of this part or otherwise as appropriate using good engineering judgment.

(3) Procurement documentation. A description of the procurement area, a record of the source(s) of any list(s) of vehicles used as a basis for procurement, and a complete record of the number of vehicles rejected after positive vehicle owner response and reason(s) for manufacturer rejection of each rejected vehicle. A complete record of the number of vehicle owners/lessees in which attempt to contact was made and the number of vehicle owners/lessees actually contacted, the number of owners/lessees not contacted and the reasons and number of each for failure to contact, and the number of owners contacted who declined to participate.

(4) All records required to be maintained under this paragraph shall be retained by the manufacturer for a period of eight (8) years after the end of production of the test group to which they relate.

(b) The manufacturer who conducts or causes to be conducted testing of any motor vehicle under § 86.1845-01 shall submit to the Administrator on a quarterly calendar year basis, with the information provided to the Administrator within 30 days of the end of the quarter of each calendar year, the following records organized by test group and evaporative/refueling family.

(1) A complete record of all emission tests performed, including tests results, the date of each test, and the phase mass values for fuel economy, carbon dioxide and each pollutant measured by the Federal Test Procedure and Supplemental Federal Test Procedure as prescribed by subpart B of this part.

(2) For each test vehicle within a test group, a record and description of procedures and test results pertaining to any inspection (including the information listed in Appendix III to this subpart), diagnostics, and maintenance performed on the test

vehicle prior to testing in as-received condition.

(3) A record and description of any inspection, diagnostics, and maintenance performed and/or testing (including emission results) of any vehicle tested subsequent to its initial as-received test.

(c) The manufacturer who conducts or causes to be conducted testing of any motor vehicle under § 86.1845-01 shall submit to the Administrator a record of the name and location of the testing laboratory(s) to be used to conduct testing for each model year 30 working days prior to the initiation of testing of that model year.

(d) The manufacturer of any test vehicle subject to § 86.1845-01 shall report to the Agency the test results (identifying the vehicle test group and emission test results) of any test vehicle in which the test vehicle fails to meet any applicable emission standard. The manufacturer must make this report within 72 hours of the completion of the testing of the test vehicle.

(e) The manufacturer who conducts or causes to be conducted testing of any motor vehicle under § 86.1846-01 shall establish, maintain and retain the following organized and indexed records by test group or Agency-designated subset.

(1) A description of all laboratory equipment calibrations and verifications as prescribed by subpart B of this part or by good engineering judgment.

(2) Procurement documentation. A description of the procurement area, a record of the source(s) of any list(s) of vehicles used as a basis for procurement, a complete record of: the number of vehicle owners/lessees in which attempt to contact was made and the number of vehicle owners/lessees actually contacted; the number of owners/lessees not contacted and the reasons and number of each for failure to contact; the number of owners contacted who declined to participate; and a complete record of the number of vehicles rejected after positive vehicle owner response and reason(s) for manufacturer rejection of each rejected vehicle.

(3) All records required to be maintained under this paragraph shall be retained by the manufacturer for a period of eight (8) years after the end of production of the test group to which they relate.

(f) Within 30 working days of the completion of testing of a test group or Agency-designated subset performed under § 86.1846-01, the manufacturer shall submit to the Administrator the following records organized by test group or Agency-designated subset.

(1) A complete record of all emission tests performed, including tests results, the date of each test, and the phase mass values for fuel economy, carbon dioxide and each pollutant measured by the Federal Test Procedure and Supplemental Federal Test Procedure as prescribed by subpart B of this part.

(2) For each test vehicle within a test group, a record and description of procedures and test results pertaining to any inspections, diagnostics, and maintenance performed on the test vehicle prior to any emission testing.

(3) A record and description of any inspections, diagnostics, maintenance performed and/or testing (including emission results) of any test vehicle tested subsequent to its initial emission test.

**§ 86.1848-01 Certification.**

(a)(1) If, after a review of the manufacturer's submitted Part I application, information obtained from any inspection, such other information as the Administrator may require, and any other pertinent data or information, the Administrator determines that the application is complete and that all vehicles within a test group as described in the application meet the requirements of this Part and the Clean Air Act, the Administrator shall issue a certificate of conformity.

(2) If, after review of the manufacturer's application, request for certification, information obtained from any inspection, such other information as the Administrator may require, and any other pertinent data or information, the Administrator determines that the application is not complete or the vehicles within a test group as described in the application, do not meet applicable requirements or standards of the Act or of this part, the Administrator may deny the issuance of, suspend, or revoke a previously issued certificate of conformity. The Administrator will notify the manufacturer in writing, setting forth the basis for the determination. The manufacturer may request a hearing on the Administrator's determination.

(b) A certificate of conformity will be issued by the Administrator for a period not to exceed one model year and upon such terms as deemed necessary or appropriate to assure that any new motor vehicle covered by the certificate will meet the requirements of the Act and of this part.

(c) All certificates are conditional upon the following conditions being met:

(1) The manufacturer must supply all required information according to the

provisions of §§ 86.1843–01 and 86.1844–01.

(2) The manufacturer must comply with all certification and in-use emission standards contained in subparts S and H of this part both during and after model year production.

(3) The manufacturer must comply with all implementation schedules sales percentages as required in § 86.1810 or elsewhere in this part. Failure to meet a required implementation schedule sales percentage will be considered to be a failure to satisfy a condition upon which the certificate was issued and any vehicles or trucks sold in violation of the implementation schedule shall not be covered by the certificate.

(4) For incomplete light-duty trucks, a certificate covers only those new motor vehicles which, when completed by having the primary load-carrying device or container attached, conform to the maximum curb weight and frontal area limitations described in the application for certification as required in § 86.1844–01.

(5) The manufacturer must meet the in-use testing and reporting requirements contained in §§ 86.1845–01, 86.1846–01, and 86.1847–01, as applicable. Failure to meet the in-use testing or reporting requirements shall be considered a failure to satisfy a condition upon which the certificate was issued. A vehicle or truck will be considered to be covered by the certificate only if the manufacturer fulfills this condition upon which the certificate was issued.

(6) Vehicles are covered by a certificate of conformity only if they are in all material respects as described in the manufacturer's application for certification (Part I and Part II).

(d) One certificate will be issued for each test group and evaporative/ refueling family combination. For diesel fueled vehicles, one certificate will be issued for each test group. A certificate of conformity is deemed to cover the vehicles named in such certificate and produced during the model year.

(e) A manufacturer of new light-duty vehicles and light-duty trucks must obtain a certificate of conformity covering such vehicles from the Administrator prior to selling, offering for sale, introducing into commerce, delivering for introduction into commerce, or importing into the United States the new vehicle. Vehicles produced prior to the effective date of a certificate of conformity may also be covered by the certificate, once it is effective, if the following conditions are met:

(1) The vehicles conform in all respects to the vehicles described in the

application for the certificate of conformity.

(2) The vehicles are not sold, offered for sale, introduced into commerce, or delivered for introduction into commerce prior to the effective date of the certificate of conformity.

(3) EPA is notified prior to the beginning of production when such production will start, and EPA is provided a full opportunity to inspect and/or test the vehicles during and after their production. EPA must have the opportunity to conduct SEA production line testing as if the vehicles had been produced after the effective date of the certificate.

(f) Vehicles imported by an original equipment manufacturer after December 31 of the calendar year for which the model year is named are still covered by the certificate of conformity as long as the production of the vehicle was completed before December 31 of that year.

(g) For test groups required to have an emission control diagnostic system, certification will not be granted if, for any emission data vehicle or other test vehicle approved by the Administrator in consultation with the manufacturer, the malfunction indicator light does not illuminate under any of the circumstances described in § 86.1806–01(k)(1) through (6).

(h) Vehicles equipped with aftertreatment technologies such as catalysts, otherwise covered by a certificate, which are driven outside the United States, Canada, and Mexico will be presumed to have been operated on leaded gasoline resulting in deactivation of such components as catalysts and oxygen sensors. If these vehicles are imported or offered for importation without retrofit of the catalyst or other aftertreatment technology, they will be considered not to be within the coverage of the certificate unless included in a catalyst or other aftertreatment technology control program operated by a manufacturer or a United States Government agency and approved by the Administrator.

(i) For all light-duty vehicles and light-duty trucks certified to NLEV standards under §§ 86.1710 through 86.1712, the following provisions apply:

(1) All certificates issued are conditional upon manufacturer compliance with all provisions of §§ 86.1710 through 86.1712 both during and after model year production.

(2) Failure to meet the requirements of § 86.1710(a) through (d) will be considered to be a failure to satisfy the conditions upon which the certificate(s) was issued and the vehicles sold in violation of the fleet average NMOG

standard shall not be covered by the certificate.

(3) Failure to comply fully with the prohibition against a manufacturer selling credits that it has not generated or are not available, as specified in § 86.1710(e), will be considered to be a failure to satisfy the conditions upon which the certificate(s) was issued and the vehicles sold in violation of this prohibition shall not be covered by the certificate.

(4) Failure to comply fully with the prohibition against offering for sale Tier 1 vehicles and TLEVs in the Northeast Trading Region, as defined in § 86.1702, after model year 2000 if vehicles with the same test groups are not certified and offered for sale in California in the same model year, as specified in § 86.1711(a), will be considered to be a failure to satisfy the conditions upon which the certificate(s) was issued and the vehicles sold in violation of this prohibition shall not be covered by the certificate.

(5)(i) The Administrator will issue a National LEV certificate of conformity for 2000 model year vehicles or engines certified to comply with the California TLEV emission standards.

(ii) This certificate of conformity shall be granted after the Administrator has received and reviewed the California Executive Order a manufacturer has received for the same vehicles or engines.

(iii) Vehicles or engines receiving a certificate of conformity under the provisions in this paragraph can only be sold in the states included in the NTR, as defined in § 86.1702, and those states where the sale of California-certified vehicles is otherwise authorized.

(6) The manufacturer shall bear the burden of establishing to the satisfaction of the Administrator that the conditions upon which the certificate was issued were satisfied.

(7) For recall and warranty purposes, vehicles not covered by a certificate because of a violation of these conditions of the certificate will continue to be held to the standards stated in the certificate that would have otherwise applied to the vehicles.

#### § 86.1849–01 Right of entry.

(a) Any manufacturer who has applied for certification of a new motor vehicle subject to testing under this subpart, or any manufacturer or entity who conducts or causes to be conducted in-use verification or in-use confirmatory testing under this subpart, shall admit or cause to be admitted any EPA Enforcement Officer or any EPA authorized representative during

operating hours on presentation of credentials to any of the following:

(1) Any facility where any such certification or in-use verification or in-use confirmatory testing or any procedures or activities connected with such testing are or were performed.

(2) Any facility where any new motor vehicle or test vehicle used for certification, in-use verification or in-use confirmatory testing which is being, was, or is to be tested is present.

(3) Any facility where any construction process or assembly process used in the modification or build up of such a vehicle into a certification vehicle is taking place or has taken place.

(4) Any facility where any record or other document relating to § 86.1849-01(a) (1), (2), and/or (3) is located.

(b) Upon admission to any facility referred to in paragraph (a) of this section, any EPA official or EPA authorized representative shall be allowed:

(1) To inspect and monitor any part or aspect of such procedures, activities, and testing facilities, including, but not limited to, monitoring vehicle preconditioning, emissions tests and mileage (or service) accumulation, bench aging, maintenance, and vehicle soak and storage procedures, and to verify correlation or calibration of test equipment.

(2) To inspect and make copies of any such records, designs, or other documents, including those records specified in §§ 86.1843-01, 86.1844-01, and 86.1847-01.

(c) In order to allow the Administrator to determine whether or not production motor vehicles conform to the conditions upon which a certificate of conformity has been issued, or conform in all material respects to the design specifications which applied to those vehicles described in the certification application for which a certificate of conformity has been issued to standards prescribed under section 202 of the Act, any manufacturer shall admit any EPA Enforcement Officer or EPA authorized representative on presentation of credentials to:

(1) Any facility where any document, design, or procedure relating to the translation of the design and construction of engines and emission-related components described in the compliance application or used for certification testing into production vehicles is located or carried on; and

(2) Any facility where any motor vehicles to be introduced into commerce are manufactured or assembled.

(d) Upon admission to any facility referred to in paragraph (c) of this section, any EPA Enforcement Officer or EPA authorized representative shall be allowed:

(1) To inspect and monitor any aspects of such manufacture or assembly and other procedures;

(2) To inspect and make copies of any such records, documents or designs; and

(3) To inspect and photograph any part or aspect of any such new motor vehicles and any component used in the assembly thereof that are reasonably related to the purpose of the entry.

(e) Any EPA official or EPA authorized representative shall be furnished by those in charge of a facility being inspected with such reasonable assistance as he may request to help him discharge any function set forth in this paragraph. Each applicant for or recipient of certification is required to cause those in charge of a facility operated for its benefit to furnish such reasonable assistance without charge to EPA whether or not the applicant controls the facility.

(f) The duty to admit or cause to be admitted any EPA Enforcement Officer or EPA authorized representative applies whether or not the applicant owns or controls the facility in question and applies both to domestic and to foreign manufacturers and facilities. EPA will not attempt to make any inspections which it has been informed that local law forbids. However, if local law makes it impossible to what is necessary to insure the accuracy of data generated at a facility, no informed judgment that a vehicle is certifiable or is covered by a certificate can properly be based on those data. It is the responsibility of the manufacturer to locate its testing and manufacturing facilities in jurisdictions where this situation will not arise.

(g) For purposes of this section:

(1) "Presentation of credentials" shall mean display of the document designating a person as an EPA Enforcement Officer or EPA authorized representative.

(2) Where vehicle, component, or engine storage areas or facilities are concerned, "operating hours" shall mean all times during which personnel other than custodial personnel are at work in the vicinity of the area or facility and have access to it.

(3) Where facilities or areas other than those covered by paragraph (g)(2) of this section are concerned, "operating hours" shall mean all times during which an assembly line is in operation or all times during which testing, maintenance, mileage (or service) accumulation, production or

compilation of records, or any other procedure or activity related to certification testing, to translation of designs from the test stage to the production stage, or to vehicle (or engine) manufacture or assembly is being carried out in a facility.

(4) *Reasonable assistance* includes, but is not limited to, clerical, copying, interpretation and translation services, the making available upon request of personnel of the facility being inspected during their working hours to inform the EPA Enforcement Officer or EPA authorized representative of how the facility operates and to answer his questions, and the performance on request of emissions tests on any vehicle which is being, has been, or will be used for certification or in-use verification or confirmatory testing. Such tests shall be nondestructive, but may require appropriate mileage (or service) accumulation. A manufacturer may be compelled to cause the personal appearance of any employee at such a facility before an EPA Enforcement Officer or EPA authorized representative by written request for his appearance, signed by the Assistant Administrator for Air and Radiation or the Assistant Administrator for Enforcement and Compliance Assurance, served on the manufacturer. Any such employee who has been instructed by the manufacturer to appear will be entitled to be accompanied, represented, and advised by counsel.

**§ 86.1850-01 Denial, suspension or revocation of certificate of conformity.**

(a) If, after review of the manufacturer's application, request for certification, information obtained from any inspection, such other information as the Administrator may require, and any other pertinent data or information, the Administrator determines that one or more test vehicles do not meet applicable requirements or standards of the Act or of this Part, the Administrator will notify the manufacturer in writing, setting forth the basis for the determination. The manufacturer may request a hearing on the Administrator's determination.

(b) Notwithstanding the fact that the vehicles described in the application may comply with all other requirements of this subpart, the Administrator may deny issuance of, suspend, or revoke a previously issued certificate of conformity if the Administrator finds any one of the following infractions to be substantial:

(1) The manufacturer submits false or incomplete information.

(2) The manufacturer denies an EPA enforcement officer or EPA authorized

representative the opportunity to conduct authorized inspections as required under § 86.1849-01.

(3) The manufacturer renders inaccurate any test data which it submits, or fails to make a good engineering judgment in accordance with § 86.1851-01(c)(1).

(4) The manufacturer denies an EPA enforcement officer or EPA authorized representative reasonable assistance as required in § 86.1849-01.

(5) The manufacturer fails to provide the records required in § 86.1844-01 to the Administrator within the deadline set forth in the request for such information.

(6) The manufacturer fails to comply with all conditions under which the certificate of conformity was granted as specified in 86.1848-01.

(7) The manufacturer otherwise circumvents the intent of the Act or of this Part.

(c) The manufacturer shall bear the burden of establishing to the satisfaction of the Administrator that the conditions upon which the certificate was issued were satisfied, or that any failure to satisfy a condition is not substantial.

(d) If a manufacturer knowingly commits an infraction specified in paragraphs (b)(1) through (b)(7) of this section, knowingly commits any fraudulent act which results in the issuance of a certificate of conformity, or fails to comply with the conditions specified in § 86.1843-01, the Administrator may deem such certificate void *ab initio*.

(e) When the Administrator denies, suspends, revokes, or voids *ab initio* a certificate, EPA will provide the manufacturer a written determination. The manufacturer may request a hearing under § 86.1853-01 on the Administrator's decision.

(f) Any suspension or revocation of a certificate of conformity shall extend no further than to forbid the introduction into commerce of vehicles previously covered by the certificate which are still in the possession of the manufacturer, except in cases of such fraud or other misconduct that makes the certification void *ab initio*.

**§ 86.1851-01 Application of good engineering judgment to manufacturers' decisions.**

(a) The manufacturer shall exercise good engineering judgment in making all decisions called for under this subpart, including but not limited to selections, categorizations, determinations, and applications of the requirements of the subpart.

(b) Upon written request by the Administrator, the manufacturer shall

provide within 15 working days (or such longer period as may be allowed by the Administrator) a written description of the engineering judgment in question.

(c) The Administrator may reject any such decision by a manufacturer if it is not based on good engineering judgment, or is otherwise inconsistent with the requirements of this subpart.

(d) If the Administrator rejects a decision by a manufacturer with respect to the exercise of good engineering judgment, the following provisions shall apply:

(1) If the Administrator determines that incorrect information was deliberately used in the decision process, that important information was deliberately overlooked, that the decision was not made in good faith, or that the decision was not made with a rational basis, the Administrator may suspend or void *ab initio* a certificate of conformity.

(2) If the Administrator determines that the manufacturer's decision does not meet the provisions of paragraph(d)(1) of this section, but that a different decision would reflect a better exercise of good engineering judgment, then the Administrator will notify the manufacturer of this concern and the basis thereof.

(i) The manufacturer shall have at least 30 days to respond to this notice. The Administrator may extend this response period upon request from the manufacturer if it is necessary to generate additional data for the manufacturer's response.

(ii) The Administrator shall make the final ruling after considering the information provided by the manufacturer during the response period. If the Administrator determines that the manufacturer's decision was not made using good engineering judgment, he/she may reject that decision and apply the new ruling to future corresponding decisions as soon as practicable.

(e) The Administrator shall notify the manufacturer in writing regarding any decision reached under paragraph (d)(1) or (2) of this section. The Administrator shall include in this notification the basis for reaching the determination.

(f) Within 30 working days following receipt of notification of the Administrator's determinations made under paragraph (d) of this section, the manufacturer may request a hearing on those 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 or other analysis in support of such objections. If, after review of the request and supporting data or analysis, the Administrator finds that the request raises a substantial factual issue, he/she shall provide the manufacturer a hearing in accordance with § 86.1853-01 with respect to such issue.

**§ 86.1852-01 Waivers for good in-use emission performance.**

(a) The Administrator may waive requirements of this subpart relating to development of emission-related information or test data if the Administrator determines with confidence that the in-use emission test verification data required in § 86.1845-01 are below the applicable emission standards for an appropriate period of time, and that such performance is likely to continue in subsequent model years.

(b) Any waiver granted under paragraph (a) of this section will be granted only if the Administrator determines that the waived requirement is not needed to assure continued emission compliance and the Administrator will have sufficient testing and other information in order to make certification decisions.

(c) Any waiver granted under paragraph (a) of this section would be limited in duration to a period of one model year, unless extended by the Administrator as a result of continued demonstrations of good in-use emission performance.

(d) The Administrator reserves the right to deny or revoke a waiver which may have been granted if he/she determines that the manufacturer no longer qualifies for the waiver.

**§ 86.1853-01 Certification hearings.**

(a)(1) After granting a request for a hearing under this subpart, the Administrator shall designate a Presiding Officer for the hearing.

(2) The hearing shall be held as soon as practicable at a time and place fixed by the Administrator or by the Presiding Officer.

(3) In the case of any hearing requested pursuant to § 86.1850-01(e), the Administrator may in his discretion direct that all argument and presentation of evidence be concluded within such fixed period not less than 30 days as he may establish from the date that the first written offer of a hearing is made to the manufacturer. To expedite proceedings, the Administrator may direct that the decision of the Presiding Officer (who may, but need not be the Administrator) shall be the final EPA decision.

(b)(1) Upon appointment pursuant to paragraph (a) of this section, the Presiding Officer will establish a hearing file. The file shall consist of the notice issued by the Administrator together with any accompanying material, the request for a hearing and the supporting data submitted therewith, and all documents relating to the request for certification and all documents submitted therewith, and correspondence and other data material to the hearing.

(2) The hearing file will be available for inspection by the applicant at the office of the Presiding Officer.

(c) An applicant may appear in person, or may be represented by counsel or by any other duly authorized representative.

(d)(1) The Presiding Officer upon the request of any party, or in his discretion, may arrange for a prehearing conference at a time and place specified by him to consider the following:

- (i) Simplification of the issues;
- (ii) Stipulations, admissions of fact, and the introduction of documents;
- (iii) Limitation of the number of expert witnesses;
- (iv) Possibility of agreement disposing of all or any of the issues in dispute;
- (v) Such other matters as may aid in the disposition of the hearing, including such additional tests as may be agreed upon by the parties.

(2) The results of the conference shall be reduced to writing by the Presiding Officer and made part of the record.

(e)(1) Hearings shall be conducted by the Presiding Officer in an informal but orderly and expeditious manner. The parties may offer oral or written evidence, subject to the exclusion by the Presiding Officer of irrelevant, immaterial and repetitious evidence.

(2) Witnesses will not be required to testify under oath. However, the Presiding Officer shall call to the attention of witnesses that their statements may be subject to the provisions of title 18 U.S.C. 1001 which imposes penalties for knowingly making false statements or representations, or using false documents in any matter within the jurisdiction of any department or agency of the United States.

(3) Any witness may be examined or cross-examined by the Presiding Officer, the parties, or their representatives.

(4) Hearings shall be reported verbatim. Copies of transcripts of proceedings may be purchased by the applicant from the reporter.

(5) All written statements, charts, tabulations, and similar data offered in evidence at the hearings shall, upon a showing satisfactory to the Presiding

Officer of their authenticity, relevancy, and materiality, be received in evidence and shall constitute a part of the record.

(6) Oral argument may be permitted in the discretion of the Presiding Officer and shall be reported as part of the record unless otherwise ordered by the Presiding Officer.

(f)(1) The Presiding Officer shall make an initial decision which shall include written findings and conclusions and the reasons or basis therefor on all the material issues of fact, law, or discretion presented on the record. The findings, conclusions, and written decision shall be provided to the parties and made a part of the record. The initial decision shall become the decision of the Administrator without further proceedings unless there is an appeal to the Administrator or motion for review by the Administrator within 20 days of the date the initial decision was filed.

(2) On appeal from or review of the initial decision the Administrator shall have all the powers which he would have in making the initial decision including the discretion to require or allow briefs, oral argument, the taking of additional evidence or the remanding to the Presiding Officer for additional proceedings. The decision by the Administrator shall include written findings and conclusions and the reasons or basis therefor on all the material issues of fact, law, or discretion presented on the appeal or considered in the review.

#### **Appendix I to Subpart S of Part 86— Vehicle Procurement Methodology**

I. *Test Sampling:* The master owner list will be obtained from manufacturer records or owner registration lists. The list shall include all vehicle configurations of the target reality check test group within the selected mailing area. The mailing area shall be within a radius of at least 20 miles from the test site.

II. *Selection Guidelines:* The manufacturer or their representative shall make a reasonable effort to contact potential participants. Solicitation letters will be sent to potential participants in the order of their appearance on a randomized master owner list. The manufacturer or their representative shall perform the following steps:

(a) The manufacturer or their representative shall mail solicitation letters in batches. The size of each batch is at least five times the required number of vehicles to be tested for the group that year. First class mail shall be used.

(b) If the response rate is less than 20% after two to four weeks, the manufacturer or their representative shall make one more attempt and send a new solicitation package to the potential participants who have not yet responded.

(c) A telephone questionnaire will be conducted on a random selection of returned, positive-response postcards.

(d) If the required number of vehicles is not obtained, additional solicitation letters shall be sent to the next batch of potential participants in the order of their appearance on a randomized master owner list until the required number of vehicles are procured.

(e) Alternative selection methods may be used with advanced approval from the Administrator.

III. *Vehicles Not Available:* Vehicles may not be available or will not be pursued for procurement for the following reasons:

(a) The potential participant response indicates "not willing to participate."

(b) The customer has moved out of the area.

(c) The solicitation letter is undeliverable.

(d) The customer did not respond after two attempts.

(e) The vehicle is not in the appropriate mileage or age category.

#### **Appendix II to Subpart S of Part 86— As-received Testing Vehicle Rejection Criteria**

1. The odometer is inoperative, has been replaced, or the indicated mileage is outside the target range.

2. The emission system of the vehicle has been obviously tampered or the vehicle has been operated on leaded fuel. A manufacturer may request a vehicle be rejected because of the addition of an aftermarket security system if the manufacturer establishes that the installation would make that vehicle's emissions unrepresentative.

3. The vehicle has been used for severe duty (trailer towing for passenger cars, snow plowing, racing)

4. The vehicle has a history of extensive collision damage or major engine repair (piston, crank, cylinder head, engine block).

5. The vehicle exhibits ominous noises or serious fluid leaks from the engine or transmission, a modified exhaust system, (headers, side pipes, aftermarket catalysts, etc) or an exhaust system with an audible leak.

6. Testing the vehicle could endanger the safety of the vehicle, test facility, or individuals conducting the testing.

7. The MIL light is flashing (severe misfire indication).

8. Other items with prior agency approval.

#### **Appendix III to Subpart S of Part 86— As-Received Inspection**

Items to be recorded at time of Initial Inspection of Vehicle—

1. Date of Inspection
3. Test Group
4. Evaporative/refueling Family
5. Vehicle model
6. Odometer Reading
7. Build Date
8. MIL light on/off status
9. Readiness code status
10. Stored OBD codes
11. Any conditions referenced in Appendix II to this subpart which result in vehicle being rejected from program.



**PART 88—[AMENDED]**

53. The authority citation for Part 88 continues to read as follows:

**Authority:** 42 U.S.C. 7410, 7418, 7581, 7582, 7583, 7584, 7586, 7588, 7589, 7601(a).

54. Section 88.301–93 of subpart C is amended by adding a new paragraph (c) to read as follows:

**§ 88.301–93 General applicability.**

\* \* \* \* \*

(c) References in this subpart to engine families and emission control systems shall be deemed to refer to durability groups and test groups as applicable for manufacturers certifying new light-duty vehicles and light-duty trucks under the provisions of 40 CFR part 86, subpart S.

**PART 600—[AMENDED]**

55. The authority for Part 600 continues to read as follows:

**Authority:** 15 U.S.C. 2001, 2002, 2003, 2005, 2006, and 2013.

56. Section 600.002–85 is amended by revising paragraph (a)(15) to read as follows:

**§ 600.002–85 Definitions.**

(a) \* \* \*

(15) *Certification Vehicle* means a vehicle which is selected under 40 CFR 86.084–24(b)(1) or 40 CFR 86.1824–01 as applicable, and is used to determine compliance under 40 CFR 86.084–30 or 40 CFR 86.1844–01 as applicable for issuance of an original certificate of conformity.

\* \* \* \* \*

57. Section 600.005–81 is amended by revising the introductory text to read as follows:

**§ 600.005–81 Maintenance of records and rights of entry.**

The provisions of this section are applicable to all fuel economy data vehicles. Certification vehicles are required to meet the provisions of 40 CFR 86.000–7 or 40 CFR 86.1844–01, as applicable:

\* \* \* \* \*

58. Section 600.006–89 is amended by revising paragraphs (c)(1) and (f) to read as follows:

**§ 600.006–89 Data and information requirements for fuel economy vehicles.**

\* \* \* \* \*

(c) \* \* \*

(1) For vehicles tested to meet the requirements of 40 CFR part 86 (other than those chosen in accordance with 40 CFR 86.1829–01(a) or 40 CFR 86.1844–01), the city and highway fuel economy results from all tests on that

vehicle, and the test results adjusted in accordance with paragraph (g) of this section.

\* \* \* \* \*

(f) If, in conducting tests required or authorized by this part, the manufacturer utilizes procedures, equipment, or facilities not described in the Application for Certification required in 40 CFR 86.087–21 or 40 CFR 86.1844–01 as applicable, the manufacturer shall submit to the Administrator a description of such procedures, equipment, and facilities.

\* \* \* \* \*

59. Section 600.007–80 is amended by revising paragraphs (a) and (b)(3), (b)(4) and (e)(1) to read as follows:

**§ 600.007–80 Vehicle acceptability.**

(a) All certification vehicles and other vehicles tested to meet the requirements of 40 CFR part 86 (other than those chosen per 40 CFR 86.080–24(c) or 40 CFR 86.1829–01(a) as applicable, are considered to have met the requirements of this section.

(b) \* \* \*

(3) The mileage on a fuel economy data vehicle must be, to the extent possible, accumulated according to 40 CFR 86.079–26(a)(2) or 40 CFR 86.1831–01 as applicable.

(4) Each fuel economy data vehicle must meet the same exhaust emission standards as certification vehicles of the respective engine-system combination during the test in which the city fuel economy test results are generated. The deterioration factors established for the respective engine-system combination per § 86.079–28 or § 86.1841–01 as applicable will be used.

\* \* \* \* \*

(e) \* \* \*

(1) The Administrator may, under the provisions of 40 CFR 86.079–37(a) or 40 CFR 86.1830–01 as applicable, request the manufacturer to submit production vehicles of the configuration(s) specified by the Administrator for testing to determine to what extent emission noncompliance of a production vehicle configuration or of a group of production vehicle configurations may actually exist.

\* \* \* \* \*

60. A new § 600.008–01 is added to read as follows:

**§ 600.008–01 Review of fuel economy data, testing by the Administrator.**

(a) *Testing by the Administrator.* (1) The Administrator may require that any one or more of the test vehicles be submitted to the Agency, at such place or places as the Agency may designate, for the purposes of conducting fuel

economy tests. The Administrator may specify that such testing be conducted at the manufacturer's facility, in which case instrumentation and equipment specified by the Administrator shall be made available by the manufacturer for test operations. Any testing conducted at a manufacturer's facility pursuant to this paragraph shall be scheduled by the manufacturer as promptly as possible.

(2) Retesting and official data determination. For any vehicles selected for confirmatory testing under the provisions of paragraph (a)(1) of this section, the Administrator will follow this procedure:

(i) The manufacturer's data (or harmonically averaged data if more than one test was conducted) will be compared with the results of the Administrator's test.

(ii) If, in the Administrator's judgment, the comparison in paragraph (a)(2)(i) of this section indicates a disparity in the data, the Administrator will repeat the city test or the highway test or both as applicable.

(A) The manufacturer's average test results and the results of the Administrator's first test will be compared with the results of the Administrator's second test as in paragraph (a)(2)(i) of this section.

(B) If, in the Administrator's judgment, both comparisons in paragraph (a)(2)(i)(A) of this section, indicate a disparity in the data, the Administrator will repeat the city fuel economy test or highway fuel economy test or both as applicable until:

(1) In the Administrator's judgment no disparity in the data is indicated by comparison of two tests by the Administrator or by comparison of the manufacturer's average test results and a test by the Administrator; or

(2) Four city tests or four highway tests or both, as applicable, are conducted by the Administrator in which a disparity in the data is indicated when compared as in paragraph (a)(2)(ii) of this section.

(iii) If there is, in the Administrator's judgment, no disparity indicated by comparison of manufacturer's average test results with a test by the Administrator, the test values generated by the Administrator will be used to represent the vehicle.

(iv) If there is, in the Administrator's judgment, no disparity indicated by comparison of two tests by the Administrator, the harmonic averages of the city and highway fuel economy results from those tests will be used to represent the vehicle.

(v) If the situation in paragraph (a)(2)(ii)(B)(2) of this section occurs, the Administrator will notify the

manufacturer, in writing, that the Administrator rejects that fuel economy data vehicle.

(b) *Manufacturer-conducted confirmatory testing.* (1) If the Administrator determines not to conduct a confirmatory test under the provisions of paragraph (a) of this section, manufacturers will conduct a confirmatory test at their facility after submitting the original test data to the Administrator whenever any of the following conditions exist:

(i) The vehicle configuration has previously failed an emission standard;

(ii) The test exhibits high emission levels determined by exceeding a percentage of the standards specified by the Administrator for that model year;

(iii) The fuel economy value of the test is higher than expected based on procedures approved by the Administrator;

(iv) The fuel economy value is close to a Gas Guzzler Tax threshold value based on tolerances established by the Administrator for that model year; or

(v) The fuel economy value is a potential fuel economy leader for a class of vehicles based on Administrator provided cut points for that model year.

(2) If the Administrator selects the vehicle for confirmatory testing based on the manufacturer's original test results, the testing shall be conducted as ordered by the Administrator. In this case, the manufacturer-conducted confirmatory testing specified under paragraph (b)(1) of this section would not be required.

(3) The manufacturer shall conduct a retest of the FTP or highway test if the difference between the fuel economy of the confirmatory test and the original manufacturer's test equals or exceeds three percent (or such lower percentage to be applied consistently to all manufacturer conducted confirmatory testing as requested by the manufacturer and approved by the Administrator).

(i) The manufacturer may, in lieu of conducting a retest, accept the lower of the original and confirmatory test fuel economy results for use in subpart C or F of this part.

(ii) The manufacturer shall conduct a second retest of the FTP or highway test if the fuel economy difference between the second confirmatory test and the original manufacturer test equals or exceeds three percent (or such lower percentage as requested by the manufacturer and

approved by the Administrator). The manufacturer may, in lieu of conducting a second retest, accept the lowest of the original test, the first confirmatory test, and the second confirmatory test fuel economy results for use in subpart C or F of this part.

(c) *Review of fuel economy data.* (1) Fuel economy data must be judged reasonable and representative by the Administrator in order for the test results to be used for the purposes of subpart C or F of this part. In making this determination, the Administrator will, when possible, compare the results of a test vehicle to those of other similar test vehicles.

(2) If testing was conducted by the Administrator under the provisions of paragraph (a) of this section, the fuel economy data determined by the Administrator under paragraph (a) of this section, together with all other fuel economy data submitted for that vehicle under § 600.006(c) or (e) will be evaluated for reasonableness and representativeness per paragraph (c)(1) of this section.

(i) The fuel economy data which are determined to best meet the criteria of paragraph (c) (1) of this section will be accepted for use in subpart C or F of this part.

(ii) City and highway test data will be considered separately.

(iii) If more than one test was conducted, the Administrator may select an individual test result or the harmonic average of selected test results to satisfy the requirements of paragraph (c)(2)(i) of this section.

(3) If confirmatory testing was not conducted by the Administrator but confirmatory testing was conducted by the manufacturer under the provisions of paragraph (b) of this section, the fuel economy data determined by the Administrator under paragraph (b) of this section, will be evaluated for reasonableness and representativeness per paragraph (c)(1) of this section.

(i) The fuel economy data which are determined to best meet the criteria of paragraph (c)(1) of this section will be accepted for use in subpart C or F of this part.

(ii) City and highway test data will be considered separately.

(iii) If more than one test was conducted, the Administrator may select an individual test result or the harmonic average of selected test results to satisfy the requirements of paragraph (c)(2)(i) of this section.

(4) If no confirmatory testing was conducted by either the Administrator or the manufacturer under the provisions of paragraph (a) and (b) of this section, respectively, then the data

submitted under the provisions of § 600.006(c) or (e) shall be accepted for use in subpart C or F of this part.

(i) City and highway test data will be considered separately.

(ii) If more than one test was conducted, the harmonic average of the test results shall be accepted for use in subpart C or F of this part.

(d) If, based on a review of the fuel economy data generated by testing under paragraph (a) of this section, the Administrator determines that an unacceptable level of correlation exists between fuel economy data generated by a manufacturer and fuel economy data generated by the Administrator, he/she may reject all fuel economy data submitted by the manufacturer until the cause of the discrepancy is determined and the validity of the data is established by the manufacturer.

(e)(1) If, based on the results of an inspection conducted under § 600.005(b) or any other information, the Administrator has reason to believe that the manufacturer has not followed proper testing procedures or that the testing equipment is faulty or improperly calibrated, or if records do not exist that will enable him to make a finding of proper testing, the Administrator may notify the manufacturer in writing of his finding and require the manufacturer to:

(i) Submit the test vehicle(s) upon which the data are based or additional test vehicle(s) at a place he may designate for the purpose of fuel economy testing.

(ii) Conduct such additional fuel economy testing as may be required to demonstrate that prior fuel economy test data are reasonable and representative.

(2) Previous acceptance by the Administrator of any fuel economy test data submitted by the manufacturer shall not limit the Administrator's right to require additional testing under paragraph (h)(1) of this section.

(3) If, based on tests required under paragraph (e)(1) of this section, the Administrator determines that any fuel economy data submitted by the manufacturer and used to calculate the manufacturer's fuel economy average was unrepresentative, the Administrator may recalculate the manufacturer's fuel economy average based on fuel economy data that he/she deems representative.

(4) A manufacturer may request a hearing as provided in § 600.009 if the Administrator decides to recalculate the manufacturer's average pursuant to determinations made relative to this section.

61. Section 600.010–86 is amended by revising paragraphs (a) introductory text and (c)(1)(i) to read as follow:

**§ 600.010–86 Vehicle test requirements and minimum data requirements.**

(a) For each certification vehicle defined in this part, and for each vehicle tested according to the emission test procedures in 40 CFR part 86 for addition of a model after certification or approval of a running change (40 CFR 86.079–32, 86.079–33 and 86.082–34 or 40 CFR 86.1842–01 as applicable):

\* \* \* \* \*

(c) \* \* \*

(1) \* \* \*

(i) Data required for emission certification under 40 CFR 86.084–24, 86.079–32, 86.079–33, and 86.082–34 or 40 CFR 86.1828–01 and 86.1842–01 as applicable,

\* \* \* \* \*

62. Section 600.111–93 is amended by revising paragraph (g)(2) to read as follows:

**§ 600.111–93 Test procedures.**

\* \* \* \* \*

(g) \* \* \*

(2) False starts and stalls during the preconditioning cycle must be treated as in 40 CFR 86.136 (d) and (e). If the vehicle stalls during the measurement cycle of the highway fuel economy test, the test is voided, corrective action may be taken according to 40 CFR 86.079–25 or 40 CFR 86.1834–01 as applicable, and the vehicle may be rescheduled for test. The person taking the corrective action shall report the action so that the test records for the vehicle contain a record of the action.

\* \* \* \* \*

63. Section 600.113–93 is amended by revising paragraph (d) to read as follows:

**§ 600.113–93 Fuel economy calculations.**

\* \* \* \* \*

(d) Calculate the city fuel economy and highway fuel economy from the grams/mile values for total HC, CO, CO<sub>2</sub> and, where applicable, CH<sub>3</sub>, OH, HCHO, NMHC and CH<sub>4</sub> and, the test fuel's specific gravity, carbon weight fraction, net heating value, and additionally for natural gas, the test fuel's composition. The emission values (obtained per paragraph (a) or (b) of this section, as applicable) used in each calculation of this section shall be rounded in accordance with 40 CFR 86.084–26(a)(6)(iii) or 40 CFR 86.1837–01 as applicable. The CO<sub>2</sub> values (obtained per paragraph (a) or (b) of this section, as applicable) used in each calculation of this section shall be rounded to the nearest gram/mile. The specific gravity

and the carbon weight fraction (obtained per paragraph (c) of this section) shall be recorded using three places to the right of the decimal point. The net heating value (obtained per paragraph (c) of this section) shall be recorded to the nearest whole Btu/lb.

\* \* \* \* \*

64. Section 600.207–93 is amended by revising paragraph (a)(3)(iii) to read as follows:

**§ 600.207–93 Calculation of fuel economy values for a model type.**

(a) \* \* \*

(3) \* \* \*

(iii) The requirements of this paragraph (a)(3) may be satisfied by providing an amended application for certification, as described in 40 CFR 86.084–21 or 40 CFR 86.1844–01 as applicable.

\* \* \* \* \*

65. A new § 600.313–01 is added to read as follows:

**§ 600.313–01 Timetable for data and information submittal and review.**

(a) A manufacturer shall submit to the Administrator fuel economy label values and sufficient information to determine fuel economy label values within the following time constraints (except for manufacturers designated under § 600.312(a)(4) who shall submit the information no later than thirty calendar days prior to the date the model type [vehicle] is initially offered for sale.

(1) For initial general label values, no later than five working days before the date that the model type is initially offered for sale;

(2) For specific label values, no later than five working days before any vehicles are offered for sale;

(3) For model types having label values updated because of running changes (as required under § 600.314(b)), the submission must be made at least five working days before the date of implementation of the running change.

(b) A manufacturer may not proceed with any label calculation until the data from each vehicle used in such calculation satisfies the requirements of § 600.008, except as allowed under the provisions of § 600.314–01(e) and approved by the Administrator.

(c) If the Administrator has waived any testing in paragraph (b) of this section and subsequently finds that the decision to waive testing was based on an incorrect data submission or that a fuel economy offset exists (based on subsequent testing of that manufacturer's product line), the Administrator may require confirmation

of the data generated by any such waived vehicle.

66. A new § 600.314–01 is added to read as follows:

**§ 600.314–01 Updating label values, annual fuel cost, Gas Guzzler Tax, and range of fuel economies for comparable automobiles.**

(a) The label values established in § 600.312 shall remain in effect for the model year unless updated in accordance with paragraph (b) of this section.

(b)(1) The manufacturer shall recalculate the model type fuel economy values for any model type containing base levels affected by running changes specified in § 600.507(a).

(2) For separate model types created in § 600.207(a)(2), the manufacturer shall recalculate the model type values for any additions or deletions of subconfigurations to the model type. Minimum data requirements specified in § 600.010(c)(1)(ii) shall be met prior to recalculation.

(3) Label value recalculations shall be performed to read as follows:

(i) The manufacturer shall use updated total model year projected sales for label value recalculations.

(ii) All model year data approved by the Administrator at the time of the recalculation for that model type shall be included in the recalculation.

(iii) Using the additional data under paragraph (b) of this section, the manufacturer shall calculate new model type city and highway values in accordance with §§ 600.207 and 600.209 except that the values shall be rounded to the nearest 0.1 mpg.

(iv) The existing label values, calculated in accordance with §§ 600.207 and 600.209, shall be rounded to the nearest 0.1 mpg.

(4)(i) If the recalculated city or highway fuel economy value in paragraph (b)(3)(iii) of this section is less than the respective city or highway value in paragraph (b)(3)(iv) of this section by 1.0 mpg or more, the manufacturer shall affix labels with the recalculated model type values (rounded to whole mpg's) to all new vehicles of that model type beginning on the day of implementation of the running change.

(ii) If the recalculated city or highway fuel economy value in paragraph (b)(3)(iii) of this section is higher than the respective city or highway value in paragraph (b)(3)(iv) of this section by 1.0 mpg or more, then the manufacturer has the option to use the recalculated values for labeling the entire model type beginning on the day of implementation of the running change.

(c) For fuel economy labels updated using recalculated fuel economy values determined in accordance with paragraph (b) of this section, the manufacturer shall concurrently update all other label information (e.g., the annual fuel cost, range of comparable vehicles and the applicability of the Gas Guzzler Tax as needed).

(d) The Administrator shall periodically update the range of fuel economies of comparable automobiles based upon all label data supplied to the Administrator.

(e) The manufacturer may request permission from the Administrator to calculate and use label values based on test data from vehicles which have not completed the Administrator ordered confirmatory testing required under the provisions of § 600.008-00(c). If the Administrator approves such a calculation the following procedures shall be used to determine if relabeling is required after the confirmatory testing is completed.

(1) The Administrator ordered confirmatory testing shall be completed as quickly as possible.

(2) Using the additional data under paragraph (e)(1) of this section, the manufacturer shall calculate new model type city and highway values in accordance with §§ 600.207 and 600.209 except that the values shall be rounded to the nearest 0.1 mpg.

(3) The existing label values, calculated in accordance with §§ 600.207 and 600.209, shall be rounded to the nearest 0.1 mpg.

(4) Relabeling. (i) If the recalculated city or highway fuel economy value in paragraph (b)(3)(iii) of this section is less than the respective city or highway value in paragraph (b)(3)(iv) of this section by 0.5 mpg or more, the manufacturer shall affix labels with the recalculated model type values (rounded to whole mpg's) to all new vehicles of that model type beginning 15 days after the completion of the confirmatory test.

(ii) If both the recalculated city or highway fuel economy value in paragraph (b)(3)(iii) of this section is less than the respective city or highway value in paragraph (b)(3)(iv) of this section by 0.1 mpg or more and the recalculated gas guzzler tax rate determined under the provisions of

§ 600.513-91 is larger, the manufacturer shall affix labels with the recalculated model type values (rounded to whole mpg's) and gas guzzler tax statement and rates to all new vehicles of that model type beginning 15 days after the completion of the confirmatory test.

(5) For fuel economy labels updated using recalculated fuel economy values determined in accordance with paragraph (e)(4) of this section, the manufacturer shall concurrently update all other label information (e.g., the annual fuel cost, range of comparable vehicles and the applicability of the Gas Guzzler Tax if required by Department of Treasury regulations).

67. Section 600.507-86 is amended by revising paragraph (a) introductory text to read as follows:

**§ 600.507-86 Running change data requirements.**

(a) Except as specified in paragraph (d) of this section, the manufacturer shall submit additional running change fuel economy data as specified in paragraph (b) of this section for any running change approved or implemented under 40 CFR 86.079-32, 86.079-33, or 86.082-34 or 40 CFR 86.1842-01 as applicable, which:

\* \* \* \* \*

68. A new § 600.512-01 is added to read as follows:

**§ 600.512-01 Model year report.**

(a) For each model year, the manufacturer shall submit to the Administrator a report, known as the model year report, containing all information necessary for the calculation of the manufacturer's average fuel economy. The results of the manufacturer calculations and summary information of model type fuel economy values which are contained in the average calculation shall be submitted to the Secretary of the Department of Transportation, National Highway and Traffic Safety Administration.

(b)(1) The model year report shall be in writing, signed by the authorized representative of the manufacturer and shall be submitted no later than 90 days after the end of the model year.

(2) The Administrator may waive the requirement that the model year report be submitted no later than 90 days after the end of the model year. Based upon

a request by the manufacturer, if the Administrator determines that 90 days is insufficient time for the manufacturer to provide all additional data required as determined in § 600.507, the Administrator shall establish a date by which the model year report must be submitted.

(3) Separate reports shall be submitted for passenger automobiles and light trucks (as identified in § 600.510).

(c) The model year report must include the following information:

(1) All fuel economy data used in the labeling calculations and subsequently required by the Administrator in accordance with § 600.507;

(2) All fuel economy data for certification vehicles and for vehicles tested for running changes approved under 40 CFR 86.1842-01;

(3) Any additional fuel economy data submitted by the manufacturer under § 600.509;

(4) A fuel economy value for each model type of the manufacturer's product line calculated according to § 600.510(b)(2);

(5) The manufacturer's average fuel economy value calculated according to § 600.510(c);

(6) A listing of both domestically and nondomestically produced car lines as determined in § 600.511 and the cost information upon which the determination was made; and

(7) The authenticity and accuracy of production data must be attested to by the corporation, and shall bear the signature of an officer (a corporate executive of at least the rank of vice-president) designated by the corporation. Such attestation shall constitute a representation by the manufacturer that the manufacturer has established reasonable, prudent procedures to ascertain and provide production data that are accurate and authentic in all material respects and that these procedures have been followed by employees of the manufacturer involved in the reporting process. The signature of the designated officer shall constitute a representation by the required attestation.

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