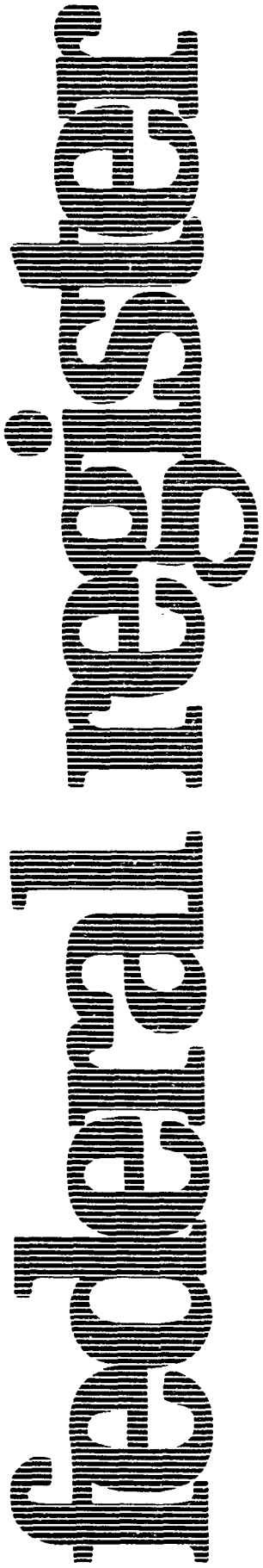

Thursday
January 7, 1988

Part II

Environmental Protection Agency

40 CFR Part 86

Control of Air Pollution From New Motor Vehicles and New Motor Vehicle Engines; Certification and Test Procedures; Gasoline Lead Content; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 86

[AMS-FRL-3279-3]

Control of Air Pollution From New Motor Vehicles and New Motor Vehicle Engines; Certification and Test Procedures; Gasoline Lead Content

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: Today's notice announces EPA's decision on the use of unleaded gasoline in emissions testing and service accumulation. Effective with the 1990 model year, emissions testing for Certification, Selective Enforcement Audit and Recall and service accumulation for Certification of gasoline-fueled light-duty vehicles, gasoline-fueled light-duty trucks, motorcycles and heavy-duty gasoline engines shall be performed using unleaded gasoline only.

DATE: These regulations take effect February 8, 1988.

Note.—Under section 307(b)(1) of the Clean Air Act, EPA hereby finds that these regulations are of national applicability. Accordingly, judicial review of this action is available only by the filing of a petition for review in the United States Court of Appeals for the District of Columbia Circuit within 60 days of publication. Under section 307(b)(2) of the Act, the requirements which are the subject of today's notice may not be challenged later in judicial proceedings brought by EPA to enforce these requirements.

ADDRESSES: Material relevant to this final rule is contained in Public Docket No. A-85-28. The docket is located at the U.S. EPA Central Docket Section, in the Room 4 South Conference Center, 401 M Street SW, Washington, DC 20460; phone (202) 382-7548. The docket may be inspected between 8:00 a.m. and 3:00 p.m. on weekdays. As provided in 40 CFR Part 2, a reasonable fee may be charged for photocopying.

FOR FURTHER INFORMATION CONTACT: Mr. F. Peter Hutchins, Emission Control Technology Division, U.S. Environmental Protection Agency, 2565 Plymouth Road, Ann Arbor, Michigan 48105, (313) 668-4340.

SUPPLEMENTARY INFORMATION:

I. Public Participation

On July 7, 1986 (51 FR 24614) EPA published a Notice of Proposed Rulemaking (NPRM) in which it was proposed that all emission testing and service accumulation of new gasoline fueled light-duty vehicles, gasoline fueled light-duty trucks, motorcycles and heavy-duty gasoline engines be performed using unleaded gasoline only. The effective date of the proposed prohibition against the use of leaded gasoline in emission testing of new vehicles and engines was the 1988 model year. (In fact, the only vehicles that are currently certified using leaded gasoline as a test fuel are certain heavy-duty vehicles and some motorcycles.)

In response to the NPRM, EPA received comments from seven interested parties. Three of the commenters (Department of Environmental Protection, City of New York; Ford Motor Company; and General Motors Corporation) provided comments on the proposed ban on the use of leaded gasoline in emissions testing. None of these commenters provided any comments opposing the exclusive use of unleaded gasoline for emissions testing and service accumulation. In fact, each of these commenters supported the proposed elimination of leaded gasoline as a test and service accumulation fuel for new motor vehicles and engines. None of the other commenters provided comments on the elimination of leaded gasoline as a test fuel. Since there was no disagreement in the comments with the proposed ban on the use of leaded gasoline as a test and service accumulation fuel for new motor vehicles and engines, EPA is today prohibiting the use of leaded gasoline in emission tests and service accumulation on new motor vehicles and engines.

Section 80.24 of 40 CFR Part 80 requires the installation of fillneck restrictors and labels when unleaded gasoline is used in certification testing. None of the commenters raised leadtime for the installation of the required fillneck restrictors and labels as an issue. However, two of the commenters (General Motors and Ford) have subsequently advised EPA that the installation of this equipment on their heavy-duty vehicles was not planned for and is not possible in time for the proposed 1988 model year. Evaluation of the time required to perform the design tasks, safety and performance testing, and procurement of necessary manufacturing equipment for fillneck restrictors has persuaded EPA that between 18 and 20 months of leadtime would be required. Based upon this, the earliest effective date of the rule would be the 1990 model year. The effective date of this rule will, therefore, be the 1990 model year rather than the 1988 model year as proposed.

Comments on three other topics were provided in response to the NPRM. These topics were: (1) An error in the cetane specification of Type 2-D grade diesel fuel for use in exhaust emission testing; (2) requests for clarification on the acceptability of carrying over data collected prior to the proposed ban on the use of leaded gasoline for heavy-duty gasoline engines and; (3) a recommendation that Selective Enforcement Audit test programs and in-use compliance test programs be performed using fuel which meets the same fuel specifications as that used for certification employing carryover data.

Comments on the cetane specification of Type 2-D grade diesel fuel used in exhaust emission testing were provided by Cummins Engine Company, Inc.; Caterpillar Inc.; Ford Motor Company; General Motors Corporation and U.S. Technical Research Company (representing Peugeot). These comments resulted from an inadvertent typographical error in the proposed regulatory language which incorrectly indicated a cetane specification of 40-45 instead of the existing value (42-50). The commenters opposed that they thought was a proposed change in the cetane value. However, EPA had no intention of proposing a change in the cetane specification for any grade of diesel fuel. There was, therefore, as noted in the comments, no mention of such a change in the preamble. In the final rules published today the correct values, *i.e.*, 42-50, for the cetane specification of Type 2-D grade diesel fuel for use in exhaust emissions tests are restored.

With respect to the request by Ford Motor Company and General Motors Corporation for clarification on EPA's intent in the proposal regarding the use of carryover data involving leaded gasoline, it was and is EPA's intent that all *new* data required for certification will be collected using unleaded gasoline. While it appears highly improbable that data carryover would be possible beyond the 1989 model year, (since new, more stringent standards for heavy-duty engines will begin in that year) EPA wishes to avoid any unnecessary retesting solely because of the change in test fuel. Since EPA anticipates that there would be no significant upward impact on emissions due to the use of unleaded gasoline in certification (a very small downward, but probably not significant, impact on the deterioration factor can reasonably be expected), manufacturers may choose to use otherwise applicable carryover data previously collected on an existing engine design using leaded gasoline. The carryover data would be, however, only a substitute for data collected on test engines or vehicles using unleaded gasoline and complying

with the maintenance regulations applicable to unleaded gasoline. Therefore, the maintenance regulations appropriate to the use of unleaded gasoline shall apply to production vehicles and the requirements (fuel tank fill neck restrictors and labels) for the use of unleaded gasoline in production vehicles will be applicable, even if carryover data is used for certification.

The third topic raised in the comments was the recommendation by Ford Motor Company that Selective Enforcement Audit (SEA) and in-use compliance testing programs on heavy-duty gasoline engines certified with carryover data be performed using leaded gasoline which conforms to the specification previously employed for certification. As indicated previously, the different test fuels are not anticipated to cause any significant emission impact, and the use of carryover data is being allowed only as a substitute in certification for data collected using unleaded gasoline. Furthermore, in-use vehicles and engines will be operated on unleaded gasoline. Therefore, EPA does not believe that there is a valid basis for adopting this recommendation. All SEA and in-use compliance testing of 1990 and later model year vehicles and engines will be performed using unleaded gasoline whether or not the vehicles or engines were certified using carryover data based on leaded gasoline results.

[1] The rule is structured so that there will be no new testing costs. Some small costs will be incurred for labeling and the use of fuel tank filler neck restrictors plus incremental cost differences between unleaded and leaded commercial gasoline for those operators not already using unleaded fuel. These costs will be partially offset by savings in maintenance due to the use of unleaded gasoline.

Finally, one commenter, Intereurope Regulations Limited, brought to EPA's attention the existence of a typographical error (a negative sign is omitted in an equation) in an existing section of the regulations (86.118–78(c)). This typographical error is corrected today.

II. Regulatory Analysis

Under Executive Order 12291, EPA must judge whether a regulation is "major" and therefore subject to the requirement of a Regulatory Impact Analysis. This regulation is not major because it will not have an annual effect on the economy of $100 million or more; will not result in significantly increased costs or prices for consumers, industries or others [1]; and will not have adverse effects on competition, employment, investment or productivity. Thus, no Regulatory Impact Analysis has been prepared.

This regulation was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12291. Any written comments by OMB and EPA's response to such comments will be placed in the public docket for this rulemaking.

III. Statutory Authority

EPA's authority to determine the specifications of gasoline used in emissions test procedures is provided in the Clean Air Act. Section 206(a)(1) of the Act confers broad authority on the Administrator to "test, or require to be tested in such manner as he deems appropriate, any new motor vehicle or motor vehicle engine submitted by a manufacturer to determine whether such vehicle or engine conforms with the regulations prescribed under Section 202 of this Act."

IV. Reporting and Recordkeeping Requirements

The information collection requirements contained in the rules which this action amends have been approved by OMB and assigned OMB Control Number 2060–0104. The amendments contained in this final rule have no impact on the reporting or recordkeeping burden.

V. Regulatory Flexibility Act

Under the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, EPA is required to determine whether a regulation will have a significant economic impact on a substantial number of small entities so as to require a regulatory flexibility analysis. The amendments of this rulemaking will not significantly increase the burden or cost of compliance for the industry or any other group. Therefore, pursuant to 5 U.S.C. 605(b), I hereby certify that this rule will not have a significant economic impact on a substantial number of small entities.

List of Subjects in 40 CFR Part 86

Administrative practice and procedure, Air pollution control, Intergovernmental relations, Gasoline, Labeling, Motor vehicles, Motor vehicle pollution, Reporting and recordkeeping requirements.

Dated: December 24, 1987.

Lee M. Thomas,

Administrator.

APPENDIX—TABLE OF SPECIFIC CHANGES

Section	Change	Reason
1. Part 86 Authority	None	
2. 86.090–25	Add § 86.090–25	Align maintenance provisions with test fuel provisions.
3. 86.118–78(c)	Addition of a minus sign	Typographical error.
4. 86.113–90	Add § 86.113–90	Specify that unleaded gasoline be the only gasoline used in all test vehicles and test engines.
5. 86.513–90	Add § 86.513–90	Same as 4 above.
6. 86.1213–90	Add § 86.1213–90	Same as 4.
7. 86.1313–90	Add § 86.1313–90	Same as 4.
8. 86.1513–90	Add § 86.1513–90	Same as 4.

For the reasons set forth in the preamble, 40 CFR Part 86 is amended as follows:

PART 86—CONTROL OF AIR POLLUTION FROM NEW MOTOR VEHICLES AND NEW MOTOR VEHICLE ENGINES: CERTIFICATION AND TEST PROCEDURES

1. The authority citation of Part 86 continues to read as follows:

Authority: 42 U.S.C. 7521, 7522, 7525, 7541, 7542 and 7601.

2. A new § 86.090–25 is added to Subpart A, to read as follows:

§ 86.090–25 Maintenance.

(a) *Applicability.* This section applies to light-duty vehicles, light-duty trucks, and heavy-duty engines.

(1) Maintenance performed on vehicles, engines, subsystems, or components used to determine exhaust or evaporative emission deterioration factors 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 maintenace.

(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 new motor vehicles engines under § 86.087–38.

(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 § 86.088–35. 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. The manufacturer must submit data which demonstrate to the Administrator that all of the emission-related scheduled maintenance which is to be performed is technologically necessary. Scheduled maintenance must be approved by the Administrator prior to being performed or being included in the maintenance instructions provided to purchasers under § 86.087–38. As provided below, EPA has determined that emission-related maintenance at shorter intervals than that outlined in paragraphs (b)(3) and (b)(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 (b)(4) of this section is also not technologically necessary.

(3) For gasoline-fueled light-duty vehicles, light-duty trucks and heavy-duty engines, 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)(7) of this section.

(i)(A) The cleaning or replacement of light-duty vehicle or light-duty truck spark plugs at 30,000 miles of use and at 30,000-mile intervals thereafter.

(B) The cleaning or replacement of gasoline-fueled heavy-duty engine spark plugs at 25,000 miles (or 750 hours) or use and at 25,000-mile intervals (or 750-hour) intervals thereafter.

(ii) For light-duty vehicles, the adjustment, cleaning, repair, or replacement of the following may not be performed within the 50,000-mile useful life of the vehicle:

(A) Positive crankcase ventilation valve.

(B) Emission-related hoses and tubes.

(C) Ignition wires.

(D) Carburetors (including idle mixture).

(E) Catalytic converter.

(F) Exhaust gas recirculation system (including all related filters and control valves).

(G) Air injection system components.

(H) Fuel injectors.

(I) Electronic engine control unit and its associated sensors (including oxygen sensor) and actuators.

(J) Evaporative emission cansister.

(K) Turbochargers.

(iii) For light-duty trucks and heavy-duty engines, the adjustment, cleaning, repair, or replacement of the following at 50,000 miles (or 1,500 hours) of use and at 50,000-mile (or 1,500-hour) intervals thereafter:

(A) Positive crankcase ventilation valve.

(B) Emission-related hoses and tubes.

(C) Ignition wires.

(D) Idle mixture.

(iv) For light-duty trucks and heavy-duty engines, the adjustment, cleaning, repair, or replacement of the following at 80,000 miles (or 2,400 hours) of use and at 80,000-mile (or 2,400-hour) intervals thereafter:

(A) Oxygen sensor.

(v) For light-duty trucks and heavy-duty engines, the adjustment, cleaning, repair, or replacement of the following at 100,000 miles (or 3,000 hours) of use and at 100,000-mile (or 3,000-hour) intervals thereafter:

(A) Catalytic converter.

(B) Air injection system components.

(C) Fuel injectors.

(D) Electronic enginer control unit and its associated sensors (except oxygen sensor) and actuators.

(E) Evaporative emission canister.

(F) Turbochargers.

(G) Carburetor(s).

(vi) (A) For light-duty trucks, and for heavy-duty engines the adjustment, cleaning, repair, or replacement the EGR system (including all related filters and control valves) at 50,000 miles (or 1,500 hours) or use and at 50,000-mile (or 1,500-hour) intervals thereafter.

(4) For diesel powered light-duty vehicles, light-duty trucks, and heavy-duty engines, 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)(7) of this section.

(i) For light-duty vehicles, the adjustment, cleaning, repair, or replacement of the following may not be performed within the 50,000-mile useful life of the vehicle:

(A) Exhaust gas recirculation system (including all related filters and control valves).

(B) Positive crankcase ventilation valve.

(C) Fuel injectors.

(D) Turbocharger.

(E) Electronic engine control unit and its associated sensors and actuators.

(F) Particulate trap or trap-oxidizer system (including related components).

(ii) For light-duty trucks and heavy-duty engines, the adjustment, cleaning, repair, or replacement of the following at 50,000 miles (or 1,500 hours) of use and at 50,000-mile (or 1,500-hour) intervals thereafter:

(A) Exhaust gas recirculation system (including all related filters and control valves).

(B) Positive crankcase ventilation valve.

(C) Fuel injector tips (cleaning *only*).

(iii) The following maintenance at 100,000 miles (or 3,000 hours) of use and at 100,000-mile (or 3,000-hour) intervals thereafter for light-duty trucks and light heavy-duty engines, or, at 150,000 miles (or 4,500 hours) of use and at 150,000-mile (or 4,500-hour) intervals thereafter for medium and heavy-duty engines: The adjustment, cleaning, repair, or replacement of

(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).

(5) [Reserved]

(6) (i) The Following components are currently 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 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 following conditions 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)(6)(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 engine family, the sample will be sales weighted to ensure that it is representative of all the families 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 § 86.087–38.

(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)(6)(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, as amended in August 1977 (42 U.S.C. 7522(a)(3)).

(7) *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 (b)(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 maintenace 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)(6) 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)(7) 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 § 86.078–6 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, etc.) may be performed on durability-data vehicles at the intervals recommended by the manufacturer to the ultimate purchaser.

(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 (d)(3) of this section, only under the following provisions:

(i) A fuel injector or spark plug may be changed if a persistent misfire is detected.

(ii) Readjustment of a gasoline-fueled 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 only with the advance approval of the Administrator. Such approval will be given if the Administrator:

(i) Has made a preliminary determination that 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; and,

(ii) Has made a determination that 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.

(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 emissions 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 the Administrator determines that part failure or system malfunction occurrence and/or repair 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) Maintenance on light-duty truck emission-data vehicles selected under § 86.085–24(b)(1) (v) or (vii), and permitted to be tested for purposes of § 86.088–23(c)(1)(ii) under the provisions of § 86.085–24(b)(2), may be performed in conjunction with emission control system modifications at the low-mileage test point, and shall be performed in accordance with the maintenance instructions to be provided to the ultimate purchaser required under § 86.087–38.

(3) Maintenance on those light-duty truck emission-data vehicles selected under § 86.085–24(b)(1)(v) which are not capable of being modified in the field for the purpose of complying with emission standards at an altitude other than that intended by the original design, may be performed in conjunction with the emission control system modifications at the low-mileage test point, and shall be approved in advance by the Administrator.

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

(2) Complete emission tests (see §§ 86.106 through 86.145) 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) All test data, maintenance reports, and required engineering reports shall be compiled and provided to the Administrator in accordance with § 86.088–23.

3. Section 86.118–78 of Subpart B is amended by revising paragraph (c) to read as follows:

§ 86.118–78 Dynamometer Calibration.

* * * * *

(c) *Calculations.* The road load power actually absorbed by the dynamometer is calculated from the following equation:

$HP_d = (1/2)\,(W/32.2)\,(V_1^2 - V_2^2)/(550t)$

where:

HP_d = Power, horsepower (kilowatts)
W = Equivalent inertia, lb (kg)
V_1 = Initial Velocity, ft/s (m/s) (55 mph = 88.5 km/h = 80.67 ft/s = 24.58 m/s)
V_2 = Final Velocity, ft/s (m/s) (45 mph = 72.4 km/h = 66 ft/s = 20.11 m/s)
t = elapsed time for rolls to coast from 55 mph to 45 mph (88.5 to 72.4 km/h)

(Expressions in parenthesis are for SI units.) When the coastdown is from 55 to 45 mph (88.5 to 72.4 km/h) the above equation reduces to:

$HP_d = 0.06073\,(W/t)$ for SI units,
$HP_d = 0.09984\,(W/t)$

4. A new § 86.113–90 is added to Subpart B, to read as follows:

§ 86.113–90 Fuel specifications.

(a) *Gasoline.* (1) Gasoline having the following specifications will be used by the Administrator in exhaust and evaporative emission testing. Gasoline having the following specification or substantially equivalent specifications approved by the Administrator, shall be used by the manufacturer in exhaust and evaporative testing except that octane specifications do not apply.

Item	ASTM	Value
Octane, research, minimum.	D2699	93
Sensitivity, minimum		7.5
Lead (organic):		
g/U.S. gal	D3237	[1] 0.050
(g/liter)		[1] (0.013)
Distillation range:		
IBP [2]:		
°F	D86	75–95
(°C)		(23.9–35)
10 pct. point:		
°F	D86	120–135
(°C)		(48.9–57.2)
50 pct. point:		
°F	D86	200–230
(°C)		(93.3–110)
90 pct. point:		
°F	D86	300–325
(°C)		(148.9–162.8)
EP, (max.):		
°F	D86	415
(°C)		(212.8)
Sulfur, weight, percent, maximum	D1266	0.10
Phosphorus:		
g/U.S. gal., maximum.	D3231	0.005
g/liter)		(0.0013)
RVP [3] [4]:		
psi	D323	8.7–9.2
(kPa)		(60.0–63.4)
Hydrocarbon composition:		
Olefins, percent, maximum.	D1319	10
Aromatics, percent, maximum.	D1319	35
Saturates	D1319	[5]

[1] Maximum.
[2] For testing at altitudes above 1,219 m (4,000 ft), the specified range is 75°–105°F (23.9–40.6°C).
[3] For testing which is unrelated to evaporative emission control, the specified range is 8.0–9.2 psi (55.2–63.4 kPa).
[4] For testing at altitudes above 1,219 m (4,000 ft), the specified range is 7.9–9.2 psi (54.5–63.4 kPa).
[5] Remainder.

(2) Unleaded gasoline representative of commercial gasoline which will be generally available through retail outlets shall be used in service accumulation. Leaded gasoline will not be used in service accumulation.

(i) The octane rating of the gasoline used shall be no higher than 1.0 Research octane number above the minimum recommended by the manufacturer and have a minimum sensitivity of 7.5 octane numbers, where sensitivity is defined as the Research octane number minus the Motor octane number.

(ii) The Reid Vapor Pressure of the gasoline used shall be characteristic of the motor fuel used during the season in which the service accumulation takes place.

(3) The specification range of the gasoline to be used under paragraph (a)(2) of this section shall be reported in accordance with § 86.088–21(b)(3).

(b) *Diesel fuel.* (1) The diesel fuels employed for testing shall be clean and bright, with pour and cloud points adequate for operability. The diesel fuel may contain nonmetallic additives as follows: Cetane improver, metal deactivator, antioxidant, dehazer, antirust, pour depressant, dye, dispersant and biocide.

(2) Diesel fuel meeting the following specifications, or substantially equivalent specifications approved by the Administrator, shall be used in exhaust emission testing. The grade of diesel fuel recommended by the engine manufacturer, commercially designated as "Type 2–D" grade diesel, shall be used.

Item	ASTM Test Method No.	Type 2–D
Cetane Number	D613	42–50
Distillation range:		
IBP:		
°F	D86	340–400
(°C)		(171.1–204.4)
10 pct. point:		
°F	D86	400–460
(°C)		(204.4–237.8)
50 pct. point:		
°F	D86	470–540
(°C)		(243.3–282.2)
90 pct. point:		
°F	D86	550–610
(°C)		(287.8–321.1)
EP:		
°F	D86	580–660
(°C)		(304.4–348.9)
Gravity, °API	D287	33–37
Total sulfur, percent.	D129 or D2622.	0.2–0.5
Hydrocarbon composition.	D1319	
Aromatics, percent, minimum.		27
Parafins, Naphthenes, Olefins.		[1]
Flashpoint, minimum:		
°F	D93	130
(°C)		(54.4)
Viscosity, centistokes.	D445	2.0–3.2

[1] Remainder.

(3) Diesel fuel meeting the following specifications, or substantially equivalent specifications approved by the Administrator, shall be used in service accumulation. The grade of diesel fuel recommended by the engine manufacturer, commercially designated as "Type 2–D" grade diesel fuel, shall be used.

Item	ASTM Test Method No.	Type 2–D
Cetane number	D613	38–58
Distillation range:		
90 pct. point:		
°F	D86	430–630
(°C)		(221.1–332.2)
Gravity, °API	D287	30–42
Total sulfur, percent, minimum.	D129 or D2622.	0.20
Flashpoint, minimum:		
°F	D93	130
(°C)		(54.4)
Viscosity, centistokes.	D455	1.5–4.5

(4) Other petroleum distillate fuels may be used for testing and service accumulation provided:

(i) They are commercially available, and

(ii) Information, acceptable to the Administrator, is provided to show that only the designated fuel would be used in customer service, and

(iii) Use of a fuel listed under paragraphs (b)(2) and (b)(3) of this section would have a detrimental effect on emissions or durability, and

(iv) Written approval from the Administrator of the fuel specifications is provided prior to the start of testing.

(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 § 86.088-21(b)(3).

(c) Fuels not meeting the specifications set forth in this section may be used only with the advance approval of the Administrator.

5. A new § 86.513-90 is added to Subpart F, to read as follows:

§ 86.513-90 Fuel and engine lubricant specifications.

(a) Gasoline having the following specifications will be used by the Administrator in exhaust emission testing. Gasoline having the following specifications or substantially equivalent specifications approved by the Administrator, shall be used by the manufacturer for emission testing except that the octane specifications do not apply.

Item	ASTM	Value
Octane, research, minimum.	D2699	96
Lead (organic):		
g/liter	D3237	[1] 0.013
(g/U.S. gal.)		[1] (0.050)
Distillation range:		
IBP:		
°C	D86	23.9-35
(°F)		(75-95)
10 pct. point:		
°C	D86	48.9-57.2
(°F)		(120-135)
50 pct. point:		
°C	D86	93.3-110
(°F)		(200-230)
90 pct. point:		
°C	D86	148.9-162.8
(°F)		(300-325)
EP:		
°C max	D86	212.8
(°F)		(415)
Sulfur, weight percent, maximum.	D1266	0.10
Phosphorus:		
g/liter, max	D3231	0.0013
(g/U.S. gal)		(0.005)
RVP, kPa (psi)	D323	55.2-63.4 (8.0-9.2)
Hydrocarbon composition:		
Olefins, percent, maximum.	D1319	10
Aromatics, percent, maximum.	D1319	35
Saturates	D1319	Remainder

[1] Maximum.

(b)(1) Unleaded gasoline and engine lubricants representative of commercial fuels and engine lubricants which will be generally available through retail outlets shall be used in service accumulation.

(2) The octane rating of the gasoline used shall be no higher than 4.0 Research octane numbers above the minimum recommended by the manufacturer.

(3) The Reid Vapor Pressure of the fuel used shall be characteristic of the motor fuel during the season in which the service accumulation takes place.

(4) If the manufacturer specifies several lubricants to be used by the ultimate purchaser, the Administrator will select one to be used during service accumulation.

(c) The specification range of the fuels and engine lubricants to be used under paragraph (b) of this section shall be reported in accordance with § 86.416.

(d) The same lubricant(s) shall be used for both service accumulation and emission testing.

(e) Fuels not meeting the specifications set forth in this section may be used only with the advance approval of the Administrator.

6. A new § 86.1213-90 is added to Subpart M, to read as follows:

§ 86.1213-90 Fuel specifications.

(a) Gasoline having the following specifications will be used in emissions testing.

Item	ASTM	Value
Octane, research, minimum.	D2699	93
Sensitivity, minimum		7.5
Lead (organic):		
g/U.S. gal	D3237	[1] 0.050
(g/liter)		[1] (0.013)
Distillation range:		
IBP:		
°F	D86	75-95
(°C)		(23.9-35)
10 pct. point:		
°F	DS86	120-135
(°C)		(48.9-57.2)
50 pct. point:		
°F	D86	200-230
(°C)		(93.3-110)
90 pct. point:		
°F	D86	300-325
(°C)		(148.9-162.8)
EP, maximum:		
°F	D86	415
(°C)		(212.8)
Sulphyr, weight percent, maximum.	D1266	0.10
Phosphorous:		
g/U.S. gal., maximum.	D3231	0.005
(g/liter)		(0.0013)
RVP:		
psi	D323	8.7-9.2
(kPa)		(60.0-63.4)
Hydrocarbon composition:		
Olefins, percent, maximum.	D1319	10
Aromatics, percent, maximum.	D1319	35
Saturates	D1319	[2]

[1] Maximum.
[2] Remainder.

(b)(1) Unleaded gasoline representative of commercial gasoline which will be generally available through retail outlets shall be used in service accumulation.

(2) The octane rating of the gasoline used shall be no higher than 1.0 Research octane number above the minimum recommended by the manufacturer and have a minimum sensitivity of 7.5 octane numbers, where sensitivity is defined as the Research octane number minus the Motor octane number.

(3) The Reid Vapor Pressure of the gasoline used shall be characteristic of the motor fuel used during the season in which the service accumulation takes place.

(c) The specification range of the gasoline to be used under paragraph (b) of this section shall be recorded.

7. A new § 86.1313-90 is added to Subpart N, to read as follows:

§ 86.1313-90 Fuel specifications.

(a) *Gasoline.* (1) Gasoline having the specifications listed in Table N90-1 will be used by the Administrator in exhaust emission testing. Gasoline having these specifications or substantially equivalent specifications approved by the Administrator, shall be used by the manufacturer in exhaust emission testing, except that the octane specifications do not apply.

TABLE N90-1

Item	ASTM	Value
Octane, research, minimum.	D2699	93
Sensitivity, minimum		7.5
Lead (organic):		
g/U.S. gal	D3237	[1] 0.050
(g/liter)		[1] (0.013)
Distillation range:		
IBP:		
°F	D86	75-95
(°C)		(23.9-35)
10 pct. point:		
°F	D86	120-135
(°C)		(48.9-57.2)
50 pct. point		
(°F)	D86	200-230
°C		(93.3-110)
90 pct. point		
(°F)	D86	300-325
°C		(148.9-162.8)
EP, maximum:		
(°F)	D86	415
°C		(212.8)
Sulphur, weight percent, maximum.	D1266	0.10
Phosphorus:		
g/U.S. gal. maximum.	D3231	0.005
(g/liter)		(0.0013)
RVP:		
psi	D323	8.7-9.2
(kPa)		(60.0-63.4)

Item	ASTM	Value
Hydrocarbon composition:		
Olefins, percent, maximum.	D1319	10
Aeromatics, percent, maximum.	D1319	35
Saturates	D1319	(2)

[1] Maximum.
[2] Remainder.

(2) Unleaded gasoline representative of commercial gasoline which is generally available through retail outlets shall be used in service accumulation.

(i) The octane rating of the gasoline used shall be no higher than one Research octane number above the minimum recommended by the manufacturer and have a minimum sensitivity of 7.5 octane numbers, where sensitivity is defined as the Research octane number minus the Motor octane number.

(ii) The Reid Vapor Pressure of the gasoline used shall be characteristic of the motor fuel used during the season in which the service accumulation takes place.

(3) The specification range of the gasoline to be used under paragraph (a)(2) of this section shall be reported in accordance with § 86.088-21(b)(3).

(b) *Diesel fuel.* (1) The diesel fuels employed for testing shall be clean and bright, with pour and cloud points adequate for operability. The diesel fuel may contain nonmetallic additives as follows: Cetane improver, meal deactivator, antioxidant, dehazer, antirust, pour depressant, dye, dispersant and biocide.

(2) Diesel fuel meeting the specifications in Table N90-2, or substantially equivalent specifications approved by the Administrator, shall be used in exhaust emissions testing. The grade of diesel fuel recommended by the engine manufacturer commercially designated as "Type 1-D" or "Type 2-D" grade diesel fuel shall be used.

TABLE N90-2

Item	ASTM	Type 1-D	Type 2-D
Cetane	D613	48-54	42-50
Distillation range:			
IBP:			
°F	D86	330-390	340-400
(°C)		(165.6-198.9)	(171.1-204.4)
10 pct. point:			
°F	D86	370-430	400-460
(°C)		(187.8-221.1)	(204.4-237.8)
50 pct. point:			
°F	D86	410-480	470-540
(°C)		(210.0-248.9)	(243.3-282.2)
90 pct. point:			
°F	D86	460-520	550-610
(°C)		(237.8-271.1)	(287.8-321.1)
EP:			
°F	D86	500-560	580-660
(°C)		(260.0-293.3)	(304.4-348.9)
Gravity, °API	D287	40-44	33-37
Total sulfur, percent	D129 or D2622.	0.05-0.20	0.20-0.50
Hydrocarbon composition:			
Aromatics, percent	D1319	[1] 8	[1] 27
Parafins, Naphthenes, Olefins	D1319	(2)	(2)
Flashpoint:			
°F	D93	120	130
(minimum)			
(°C)		(48.9)	(54.4)
Viscosity, Centistokes	D445	1.6-2.0	2.0-3.2

[1] Minimum.
[2] Remainder.

(3) Diesel fuel meeting the specifications in Table N90-3, or substantially equivalent specifications approved by the Administrator, shall be used in service accumulation. The grade of diesel fuel recommended by the engine manufacturer, commercially designated as "Type 1-D" or "Type 2-D" grade diesel fuel shall be used:

TABLE N90-3

Item	ASTM	Type 1-D	Type 2-D
Cetane	D613	42-56	30-58
Distillation range:			
90 pct. point:			
°F	D86	440-530	540-630
(°C)		(226.7-7-276.7)	(282.2-332.2)
Gravity, °API	D287	39-45	30-42

TABLE N90-3—Continued

Item	ASTM	Type 1-D	Type 2-D
Total sulfur, percent, minimum	D129 or D2622.	0.05	0.20
Flashpoint:			
°F, minimum	D93	120	130
(°C)		(48.9)	(54.4)
Viscosity, centistokes	D455	1.2-2.2	1.5-4.5

(4) Other petroleum distillate fuels may be used for testing and service accumulation provided that:

(i) They are commercially available;

(ii) Information, acceptable to the Administrator, is provided to show that only the designated fuel would be used in customer service;

(iii) Use of a fuel listed under paragraphs (b)(2) and (b)(3) of this section would have a detrimental effect on emissions or durability;

(iv) Written approval from the Administrator of the fuel specifications is provided prior to the start of testing.

(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 § 86.088-21(b)(3).

8. A new § 86.1513-90 is added to Subpart P, to read as follows:

§ 86.1513-90 Fuel specifications.

The requirements of this section are set forth in § 86.1313-90(a) for heavy-duty engines, and in § 86.113-90(a) for light-duty trucks.

[FR Doc. 88-157 Filed 1-6-88; 8:45 am]

BILLING CODE 6560-50-M