

significantly reduce driveability performance. Such maintenance is designated anticipated maintenance. Anticipated maintenance must be identified by the manufacturer and approved as being appropriate by the Administrator prior to the start of service accumulation. The approximate distance at which the need for anticipated maintenance may arise must be specified in the application for certification.

(h) Complete emission tests (see subpart F) are required, unless waived by the Administrator, before and after any vehicle maintenance which may reasonably be expected to affect emissions.

**§ 86.429-78 Maintenance, unscheduled; test vehicles.**

(a) Any unscheduled engine, emission control system, or fuel system adjustment, repair, removal, disassembly, cleaning, or replacement on vehicles shall be performed only with the advance approval of the Administrator.

(1) In the case of unscheduled maintenance, such approval will be given if the Administrator:

(i) Has made a preliminary determination that part failure or system malfunction, or the repair of such failure or malfunction, does not render the vehicle unrepresentative of vehicles 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 misfire, vehicle stall, overheating, fluid leakage, loss of oil pressure, or charge indicator warning.

(2) Emission measurements may not be used as a means of determining the need for unscheduled maintenance under paragraph (a)(1)(i) of this section.

(b) Repairs to vehicle components of test vehicles, 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.

(c) The Administrator shall be given the opportunity to verify the extent of an overt indication of part failure and/or vehicle malfunction (e.g., misfire, stall), or an activation of an audible and/or visual signal, prior to the performance of any maintenance to which such overt indication or signal is relevant under the provisions of this section.

(d) 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 at dealerships and other service outlets and

(1) Are used in conjunction with scheduled maintenance on such components, and

(2) Are used subsequent to the identification of a vehicle or engine malfunction, as provided in paragraph (a)(1) of this section for durability or emission data vehicles, or

(3) Unless specifically authorized by the Administrator.

(e) If the Administrator determines that part failure or system malfunction occurrence and/or repair rendered the vehicle unrepresentative of vehicles in use, the vehicle shall not be used as a test vehicle.

(f) Complete emission tests are required, unless waived by the Administrator, before and after any vehicle maintenance which may reasonably be expected to affect emissions.

**§ 86.430-78 Vehicle failure.**

Any test vehicle which incurs major mechanical failure necessitating disassembly of the engine shall not be used as a test vehicle. This prohibition does not apply to failures occurring after the completion of all required tests at the total test distance.

[49 FR 48139, Dec. 10, 1984]

**§ 86.431-78 Data submission.**

(a) Data from all tests (including voided tests) performed by a manufacturer with total projected sales in excess of 10,000 vehicles shall be included in the application.

(b) The manufacturer shall furnish to the Administrator explanation for voiding any test. The Administrator will determine if voiding the test was

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appropriate based upon the explanation given by the manufacturer. If the Administrator determines that voiding the test was not appropriate, the Administrator may require that the data from that test be used in the calculation of the deterioration factor for emissions.

(c) When unscheduled or anticipated maintenance is performed, a complete record of all pertinent maintenance, including the malfunction diagnosis made, the corrective action taken, and the test data obtained shall be included in the application.

(d) A complete record of all maintenance shall be supplied.

[42 FR 1126, Jan. 5, 1977, as amended at 49 FR 48139, Dec. 10, 1984]

### § 86.432-78 Deterioration factor.

(a) Deterioration factors shall be developed for each test vehicle from the emission test results. A separate factor shall be developed for each pollutant. The applicable data to be used in calculating these factors are:

(1) The results from all valid tests conducted by the manufacturer or Administrator at scheduled test intervals.

(2) The results from tests conducted before and after scheduled maintenance unless specifically excluded by the Administrator.

(3) The results from tests conducted before and after unscheduled maintenance, if approval of the maintenance by the Administrator was conditioned on the data being used in the deterioration factor calculation.

(b) Emission results which are less than 0.10 g/km shall be considered to be 0.10 g/km for purposes of this section.

(c) Test results for each pollutant shall be plotted as a function of the service accumulated at the start of the emission test, rounded to the nearest kilometre. These results shall be correlated to a straight line, fit by the method of least squares.

(d) An exhaust emission deterioration factor will be calculated by dividing the predicted emissions at the useful life distance by the predicted emissions at the total test distance. Predicted emissions are obtained from the correlation developed in paragraph (c) of this section.

Factor = Predicted total distance emissions/Predicted total test distance emissions

These interpolated and extrapolated values shall be carried out to four places to the right of the decimal point before dividing one by the other to determine the deterioration factor. The results shall be rounded to three places to the right of the decimal point in accordance with ASTM E 29-67.

(e) Deterioration factors computed to be less than 1.000 shall be 1.000.

(f)(1) The manufacturer has the option of applying an outlier test point procedure to completed durability data within its certification testing program for a given model year.

(2) The outlier procedure will be specified by the Administrator.

(3) For any pollutant, durability-data test points that are identified as outliers shall not be included in the determination of deterioration factors if the manufacturer has elected this option.

(4) The manufacturer shall specify to the Administrator, before the certification of the first engine family for that model year, if it intends to use the outlier procedure.

(5) The manufacturer may not change procedures after the first engine family of the model year is certified.

(6) Where the manufacturer chooses to apply the outlier procedure to a data set containing data which were averaged under § 86.427-78(e), the outlier procedure shall be completed before averaging the data.

[42 FR 1126, Jan. 5, 1977, as amended at 42 FR 56737, Oct. 28, 1977; 49 FR 48139, Dec. 10, 1984]

### § 86.434-78 Testing by the Administrator.

(a) At the conclusion of service accumulation, and after emission tests for deterioration, the Administrator may require confirmatory testing. The Administrator will designate where such testing shall be performed.

(b) The manufacturer may request a retest. The results of the retest will be used to determine compliance.

(c) If the emission results exceed the standard, certification will be denied.

[49 FR 48139, Dec. 10, 1984]