State of California
AIR RESOURCES BOARD

Resolution 80-5

March 5, 1980

WHEREAS, Section 39601 of the Health and Safety Code authorizes the Air Resources Board to adopt standards, rules and regulations necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law; and

WHEREAS, Section 43210 of the Health and Safety Code requires that the Board adopt regulations which provide for the testing of new motor vehicles on factory assembly lines or in such manner as the Board determines best suited to carry out the purpose of Part 5 (commencing with Section 43000), Division 26, of the Health and Safety Code; and

WHEREAS, Section 43000(e) of the Health and Safety Code states that emission standards applied to new motor vehicles are standards with which all new motor vehicles shall comply; and

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of the Administrative Procedure Act (Government Code, Title 2, Division 3, Part 1, Chapter 4.5);

NOW, THEREFORE BE IT RESOLVED, that the Board hereby amends its regulations in Article 2, Subchapter 1, Chapter 3, Title 13, California Administrative Code, and confirms Board adoption of the following Section 1960.2 which reads:

1960.2 Special Standards for 1980 and 1981 Model Passenger Cars

(a) Notwithstanding any other provision of this Chapter, for any vehicle manufacturer who is subject to "in lieu" standards pursuant to Section 202(b)(1)(B) of the Clean Air Act as amended in 1977, the oxides of nitrogen emissions from 1980 and 1981 model passenger cars shall not exceed an assembly line test level of 1.0 grams per vehicle mile as determined on a production average basis as measured by calendar quarter and evaluated on a cumulative basis.

(b) The oxides of nitrogen emissions from each 1980 and 1981 model passenger car engine family and subgroup produced by a manufacturer pursuant to this section shall not exceed a standard of 1.5 grams per vehicle mile.

(c) For the purposes of testing performed pursuant to Subchapter 2, Article 1, (Assembly Line Testing), the deterioration factors to be applied to 1981 model passenger cars shall be determined by the Executive Officer after taking into account certification and engineering data for similar vehicles.

(d) Joint ARB-manufacturer evaluations of production average data will be made each six months, starting with production test data accumulated through December 21, 1979, and appropriate relief will be made available to such manufacturer should unanticipated technical problems yield an inability to meet the production average level required by this section.

(e) All definitions, standards, test procedures and other requirements of this Chapter not inconsistent with this section shall apply to all vehicles produced by such manufacturer for sale in California.

NOTE: Authority cited: Section 39600 and 39601, Health and Safety Code.
Reference: Sections 43100 and 43101, Health and Safety Code.

BE IT FURTHER RESOLVED, that the Board hereby amends: (1) the "California Assembly-Line Test Procedures for 1980 Model Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," (2) "California Assembly-Line Test Procedures for 1981 Model Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," (3) "California Exhaust Emissions Standards and Test Procedures for 1980 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," and (4) "California Exhaust Emission Standards and Test Procedures for 1981 and Subsequent Model Passenger Cars, Light Duty Trucks and Medium-Duty Vehicles" as set forth in Attachments 1, 2, 3, and 4, respectively.

BE IT FURTHER RESOLVED, that the Board hereby finds that its regulations in Sections 1960.2, 2058 and 2059, Title 13, California Administrative Code, the 1980 and 1981 assembly-line test procedures and related exhaust emission standards and test procedures are individually for each vehicle category, and, in the aggregate, at least as protective of public health and welfare as applicable federal regulations.

I certify that the above is a true and correct copy of Resolution 80-5, as passed by the Air Resources Board.

Sally Rump
BOARD SECRETARY

State of California
AIR RESOURCES BOARD

California Assembly-Line Test Procedures for ~~1979~~ 1980 Model Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles

Adopted: November 16, 1978
Amended: January 30, 1979
Amended: May 9, 1979
Amended: March 5, 1980

Note: These procedures are printed in a style to emphasize the differences from the 1979 Assembly-Line Test Procedures. Additions are indicated by underlining and deletions are lined out. Modifications to Section 3.(g) made by the Executive Officer in compliance with the Boards directive are shown by two underlines. March 5, 1980 changes are listed in Part 5.

State of California

AIR RESOURCES BOARD

California Assembly-Line Test Procedures for ~~1979~~ 1980
Model Year Passenger Cars, Light-Duty
Trucks and Medium-Duty Vehicles

A. General Provisions

1. Applicability

These test procedures, adopted pursuant to Section 43210 of the California Health and Safety Code, are applicable to 1980 model year gasoline and diesel powered passenger cars, ~~gasoline-and diesel-powered~~ light-duty trucks, and ~~gasoline-and-diesel-powered~~ medium-duty vehicles having an engine displacement of 50 cubic inches or greater, except motorcycles, subject to registration and manufactured for sale in California.

2. Compliance

The procedures specify two types of tests: (1) a short inspection test to be applied to every vehicle before sale, and (2) a quality audit test according to the "California Exhaust Emission Standards and Test Procedures for 1980 Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles." A vehicle is in compliance with these assembly-line standards and test procedures when that vehicle is in compliance with the inspection test requirements and that vehicle's engine family is in compliance with the quality audit test requirements. Since quality audit evaluations occur less

frequently than the inspection tests, a vehicle which passes the inspection test may be presumed to be in compliance with the full assembly-line procedures pending the quality audit evaluation of that vehicle's engine family.

3. Decal

Section 43200 of the Health and Safety Code requires manufacturers to affix a window decal in accordance with specific requirements. No vehicle subject to these test procedures may be sold and registered in this state which is not in compliance with the requirements of Section 43200 and this paragraph.

For vehicles manufactured during the first calendar quarter of model production and not to exceed 45 calendar days thereafter, the exhaust emissions shown on the window decal shall be the highest values from the engine family emission data fleet passing certification. Not more than 45 calendar days after the first quarter and each succeeding calendar quarter of production, the exhaust emissions shown on the window decal shall be the average quality audit

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values for the engine family during the previous calendar quarter of production. During the second calendar quarter, however, the manufacturer may continue using the decal showing the highest values from the engine family emission data fleet, if the first calendar quarter is a short production period (less than a full calendar quarter). For engine families certified by carry-over, the emission data values from the last full quarter of the previous year's production may be used. For a model-year build-out production period, the decal emission values used for the previous production quarter may be used. Each vehicle emission decal shall have the following statement displayed thereon:

> "This vehicle has been tested under and conforms to California Assembly-Line Test Requirements."

4. Access

Air Resources Board personnel and mobile laboratories shall have access to vehicle assembly plants, distribution facilities and test facilities for the purpose of vehicle selection, testing and observation. ~~To the extent practical and except where the Executive Officer has probable cause for investigation possible violation of these test procedures or of the applicable emission standards, the frequency of access shall be proportional among manufacturers in relation to California vehicle sales.~~ Scheduling of access shall be arranged with the designated manufacturer's representative and shall not unreasonably disturb normal operations.

5. Variations and Exemptions

Variations from these procedures which produce substantially equivalent results may be authorized by the Executive Officer. In extraordinary circumstances where compliance with these procedures is not possible or practicable, a manufacturer may appeal to the Air Resources Board for a temporary exemption.

B. Inspection Test Procedures

This inspection test shall be performed on all vehicles subject to these test procedures.

1. Inspection Test Procedures

(a) Functional Test

Functional tests of the engine components and control systems which affect emissions shall be made prior to the steady-state emissions tests. If a vehicle fails one or more functional tests, it must be repaired and pass a functional retest before it can be emission tested.

A list of the items to be functionally checked and a procedure for performing these checks shall be submitted to the Executive Officer prior to the start of production. Within 60 days of its receipt the Executive Officer may require revisions to the proposal.

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(b) Steady State Emissions Test

The vehicle engine shall be adjusted to the manufacturer's specifications for delivery to the customer prior to the steady-state emissions test. This test shall consist of a determination of HC and CO exhaust concentrations with the engine operating in a normal idle condition. All tests, including those of control limit test vehicles, shall be conducted as follows:

(1) Vehicles shall be tested in the normal "warmed-up" operating temperature range, i.e., after the choke is fully open and the engine is at curb idle speed, but before thermal override devices are actuated to prevent overheating. The test may be performed in any transmission gear; however the same gear shall be used for control limit test vehicles and production vehicles. For each engine family, the idle test may be performed without AIR provided that the control limit vehicles are tested both with and without AIR. The requirements of section B.(3)(g) must be met with AIR.

The control limit test vehicles and all production vehicles should be warmed-up and tested in the same manner.

(2) The sampling probes of the analytical system shall be inserted into the exhaust outlets far enough to avoid dilution with the outside air. Where this is not possible, a tailpipe extension shall be used.

(3) A vehicle which fails a steady-state emissions test shall be retested or repaired and shall pass on retest prior to sale.

2. Evaluation

Any vehicle tested by the steady-state emissions test showing emissions less than the control limits established for its engine family or subgroup and which had previously passed the functional tests will be considered to be in compliance with the inspection test requirements.

3. Control Limits

The control limits for each engine family or subgroup at the start of a model year will be determined as follows:

(a) Measure the emissions from the first 100 vehicles of each engine family or subgroup tested by the steady-state assembly-line inspection test.

(b) Determine the mean emission level and standard deviation for each pollutant (HC and CO).

(c) The control limit for each pollutant is the sum of the mean plus two times the standard deviation for that pollutant.

(d) Until the first control limits are established the manufacturer shall use temporary control limits based on the first ter tests. These ten vehicles are deemed to meet the control limits so established.

(3) A vehicle which fails a steady-state emissions test shall be retested or repaired and shall pass on retest prior to sale.

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(c) The control limit for each pollutant is the sum of the mean plus two times the standard deviation for that pollutant.

(d) Until the first control limits are established the manufacturer shall use temporary control limits based on the first ter tests. These ten vehicles are deemed to meet the control limits so established.

(e) (i) For control systems that do not use catalytic converters - If the HC control limit value is determined in subparagraph (c) is less than 100 ppm, the HC control limit value may be increased by up to 50 ppm, not to exceed 100 ppm. If the CO control limit determined in subparagraph (c) is less than 1.0 percent, the CO control limit may be increased by up to 0.5 percent, not to exceed 1.0 percent.

(ii) For control systems that use catalytic converters - If the HC control limit value determined in subparagraph (c) is less than 50 ppm, the control limit value may be increased by up to 30 ppm, not to exceed 50 ppm.

If the CO control limit determined in subparagraph (c) is less than 0.5 percent, the CO control limit may be increased by up to 0.3 percent, not to exceed 0.5 percent.

(f) Idle control limit values may be rounded to the nearest 10 ppm HC and 0.1 percent CO in conformance to ASTM E29-67, except where this would result in a zero value.

(g) The maximum allowable steady-state control limits for HC and CO are those values used as the idle mode standard shown in Section 2176, Title 13 of the California Administrative Code for the ~~1979~~ 1980 model-year. An exemption to this requirement will be granted providing the manufacturer submits emission data with each quarterly report listed in one of the options below:

(1) Submit with each quarterly assembly-line report HC and CO emission values measured at engine idle speed for each quality audit vehicle tested and the computed mean and standard deviation of HC and CO emission results for the total number of vehicles tested, by engine family. Measurements of HC and CO shall be conducted immediately following completion of the dynamometer run and vehicles shall be in a state described under B.1 (b) (1) above. If less than 30 vehicles were quality audit tested during the reporting quarter the computation of the means and standards deviation are not required.

(2) Submit quarterly HC and CO emission values measured at engine idle speed for a minimum of 30 vehicles in the engine family or sub-group immediately after these vehicles have complied with the assembly-line inspection procedures and have either been run-in a distance of 50 miles (on the road or dynamometer) or after other appropriate engine break-in has been performed and the engine is operating at a fully warmed-up condition as described in B.1 (b) (1) above. In addition to emission results of individual vehicles, the mean and standard deviation shall be computed and submitted.

(3) The manufacturer may propose other methods to achieve results equivalent to the two options above. These emission data shall be obtained from stabilized vehicles which have emissions control systems with no defects and are properly adjusted to manufacturers specifications.

(h) Control limits with AIR operating shall be calculated and reported for information purposes for those engine families that are tested without AIR in operation.

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(2) Submit quarterly HC and CO emission values measured at engine idle speed for a minimum of 30 vehicles in the engine family or sub-group immediately after these vehicles have complied with the assembly-line inspection procedures and have either been run-in a distance of 50 miles (on the road or dynamometer) or after other appropriate engine break-in has been performed and the engine is operating at a fully warmed-up condition as described in B.1 (b) (1) above. In addition to emission results of individual vehicles, the mean and standard deviation shall be computed and submitted.

(3) The manufacturer may propose other methods to achieve results equivalent to the two options above. These emission data shall be obtained from stabilized vehicles which have emissions control systems with no defects and are properly adjusted to manufacturers specifications.

(h) Control limits with AIR operating shall be calculated and reported for information purposes for those engine families that are tested without AIR in operation.

Control limit values shall be recalculated for each production quarter based on the measured emissions from at least 100 vehicles produced during the last half of the preceding quarter of production for each engine family or subgroup tested by the steady-state emissions test. When production levels do not permit compliance with the above, data from vehicles produced during the first half of the preceding quarter may be used. If the quarterly production of any engine family is less than 100 vehicles, the manufacturer shall use the test results from all vehicles produced during that quarter in determining the control limit values for the next quarter.

The Executive Officer shall be notified within one week if control limit values are recalculated following running changes which affect idle emissions levels. The new control limit values and the date they first went into effect shall be part of the notification.

All testing, reports, evaluations, etc. shall be by engine family except when the Executive Officer has approved a breakdown by subgroups (e.g., different carburetors, engine displacements, control systems, transmissions, and inertia weights), by assembly plant, or both.

Note: Data from any vehicle indicating gross engine malfunction, and/or failure or disconnection of any emission control component, shall be excluded from that used for generating control limits. Retest data on vehicles exceeding the control limits shall not be used in determining control limits for subsequent quarters.

4. Reports

Reports shall be submitted to the Air Resources Board within 45 calendar days of the end of each calendar quarter and within 45 calendar days of the end of the manufacturer's model production year. Results for two different model years shall not be combined statistically.

The report shall include:

(a) The temporary quarterly control limit values obtained for the first quarter of production.

(b) The mean and the standard deviation of the steady-state emissions tests used to determine the quarterly control limits.

(c) The steady-state control limit values for the next quarter's production.

All HC values should be stated as hexane equivalents for NDIR measurement and ppm carbon if a flame ionization detector is used.

C. Quality Audit Test Procedures

1. Standards and Test Procedures

The emission standards and the exhaust sampling and analytical procedures shall be those described in the "California Exhaust

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(c) The steady-state control limit values for the next quarter's production.

All HC values should be stated as hexane equivalents for NDIR measurement and ppm carbon if a flame ionization detector is used.

C. Quality Audit Test Procedures

1. Standards and Test Procedures

The emission standards and the exhaust sampling and analytical procedures shall be those described in the "California Exhaust

Emission Standards and Test Procedures for ~~1979~~ 1980 Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles" applicable to vehicles tested for exhaust emissions only, with the following exceptions or additions:

(a) After the inspection tests, no emissions tests may be performed on a quality-audit vehicle prior to the first quality audit test, except where such tests are run on all vehicles manufactured for sale in California.

(b) The vehicle shall begin the test sequence as received from the inspection test, except for mileage accumulation or engine run-in. The schedule for mileage accumulation or engine run-in and any changes to the schedule must be submitted to the Executive Officer with each quarterly report. This schedule must be adhered to for all quality audit testing within an engine family and subgroup or engine family and assembly plant as appropriate.

(c) A new carbon canister may be installed on the vehicle at the start of the test sequence. The test sequence shall consist of one Urban Dynamometer Driving Schedule (UDDS) test procedure, followed by a cold-soak and CVS test. The manufacturer may request permission to use an alternate preconditioning procedure provided the manufacturer demonstrates that it will not affect the loading of the carbon canister when compared with the UDDS.

(d) If the vehicle is shipped to a remote facility for quality audit testing; ~~the normal pre-delivery inspection may be performed according to the manufacturer's written instructions to its dealers. However, if a repair or adjustment is made, then this information shall be included in the quarterly report.~~ in addition to the above provisions (a), (b) and (c), correction of damage or maladjustment which may reasonably be found to have resulted from shipment of the vehicle is permitted only after the initial test of the vehicle, except for compelling reasons. Compelling reasons are that the vehicle is not testable, or is not reasonably operative, or is not safe to drive, or that damage to the vehicle would be likely if the vehicle were tested.

All adjustments or repairs performed on vehicles prior to each test shall be reported to the Executive Officer. In the event a retest is performed application may be made to the Executive Officer for permission to substitute the after-repair test results for the original test reuslts. The Executive Officer will either affirm or deny the application within ten working days.

However, if 100% of the manufacturer's production is given a particular correction of damage or malajustment by the manufacturer's own personnel subsequent to consignment for shipping from that manufacturer's assembly-line, that same correction of damage

(d) If the vehicle is shipped to a remote facility for quality audit testing, ~~the normal pre-delivery inspection may be performed according to the manufacturer's written instructions to its dealers. However, if a repair or adjustment is made, then this information shall be included in the quarterly report.~~ in addition to the above provisions (a), (b) and (c), correction of damage or maladjustment which may reasonably be found to have resulted from shipment of the vehicle is permitted only after the initial test of the vehicle, except for compelling reasons. Compelling reasons are that the vehicle is not testable, or is not reasonably operative, or is not safe to drive, or that damage to the vehicle would be likely if the vehicle were tested.

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However, if 100% of the manufacturer's production is given a particular correction of damage or malajustment by the manufacturer's own personnel subsequent to consignment for shipping from that manufacturer's assembly-line, that same correction of damage

or maladjustment will be allowed prior to initial testing of the specific vehicles randomly selected for testing, provided the manufacturer's written instructions are submitted to the Executive Officer.

2. Vehicle Sample Selection

The vehicle manufacturer shall randomly select vehicles within each engine family for quality audit testing. Each selected vehicle for quality audit teting must pass the inspection test, be equipped with emission control systems certified by the ARB, and be representative of the manufacturer's California sales. The procedure for randomly selecting vehicles must be submitted to the Executive Officer prior to production.

A continuous sample rate shall be chosen by the manufacturer to provide a sample which is representative of the total production. The manufacturer shall select a sample rate which he or she determines will be satisfactory for use by the Air Resources Board in determining the number of vehicles in the entire population of a particular engine family which do not meet Board established emission standards by extrapolation from the percentage of the sample not meeting the standards. The results from the sample may be extrapolated to the entire population subject to the provisions relating to vehicle exclusion contained in Paragraph 3 below. The manufacturer shall notify the Executive Officer of any changes to the sample rate. The date of such changes shall be reported in accordance with Paragraph 4 below.

~~Medium-duty-vehicles-selected-for-quality-audit-testing-shall-be divided-into-two-groups.--The-first-group-(Group-A),-comprising approximately-two-thirds-of-the-sample,-shall-be-identical-to-those configurations-(i.e.,-transmission,-inertia-weight,-and-axle-ratio) selected-for-certification-testing.--The-second-group-(Group-B), comprising-approximately-the-remaining-one-third,-shall-be-those configurations-not-selected-for-certification-testing.--Random selection-from-the-entire-engine-family-will-be-accepted,-if-Group A-vehicles-comprise-at-least-65%-of-the-sample.~~

Four wheel drive vehicles which can be manually shifted to a two wheel drive mode will be tested in the normal on-highway two wheel drive mode of operation. If full time four wheel drive vehicles are selected, substitutions may be made with comparable two wheel drive vehicles of the same engine family. If comparable two wheel drive vehicles are not available, selected full time four wheel drive vehicles will be tested after having the front drive wheels temporarily disengaged or the front end of the vehicle elevated.

The Executive Officer may, upon notice to the manufacturer, require the sample rate to be increased to a maximum of ten percent of production (not to exceed 30 additional vehicles) of the calendar quarterly production of any engine family by invoking Section 2110, Chapter 3, Title 13 of the California Administrative Code.

3. Evaluation

The evaluation shall be performed on sample sizes containing 30 or more vehicles. If a sample size for a particular production quarter is less than 30 vehicles, the data from that quarter shall be combined with the data from each successive quarter until at least 30 vehicles have been quality-audit tested. If the sample size for the last quarter's production does not contain at least 30 vehicles, the data from the last quarter shall be combined with each preceding quarter until the sample size contains at least 30 vehicles. For an engine family which contains both light-duty trucks and medium-duty vehicles, all references in this test procedure to engine family shall mean light-duty truck subgroup or medium-duty vehicle subgroup. ~~Only Group A medium-duty vehicles will be evaluated. The emission data from Group B medium-duty vehicles will be for information only.~~

Based upon additional information submitted by a manufacturer, the Executive Officer may allow rejection of any data from vehicles if they are considered to be not representative of production.

For each production quarter if 30 or more vehicles are tested, the ARB shall consider that probable cause exists for finding a violation by any engine family if the average emissions of any pollutant, after multiplying the emission data of each vehicle

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Based upon additional information submitted by a manufacturer, the Executive Officer may allow rejection of any data from vehicles if they are considered to be not representative of production.

For each production quarter if 30 or more vehicles are tested, the ARB shall consider that probable cause exists for finding a violation by any engine family if the average emissions of any pollutant, after multiplying the emission data of each vehicle

by the appropriate certification deterioration factor, and the assigned methane content correction factor (for hydrocarbons only), exceed the applicable ~~1979~~ 1980 exhaust emission standards, when rounded to the same number of significant digits as the standard.

The Executive Officer may invoke Section 2109, Chapter 3, Title 13 of the California Administrative Code, if probable cause is found for a full or combined production quarter. The Executive Officer may invoke Section 2110, Chapter 3, Title 13 of the California Administrative Code if probable cause is found for a short start-up production period (less than a full calendar quarter), for the first thirty vehicles quality audit tested during any production quarter or from the start of production, or for vehicles evaluated in accordance with the monthly evaluation required by paragraph 4 below. In addition, the ARB may seek statutory penalties pursuant to Sections 43211 and 43212 of the California Health and Safety Code at the end of each full or combined calendar quarter of production.

If the Executive Officer invokes Section 2109 or 2110, an evaluation will be made on vehicles produced subsequent to the invocation of a plan adopted pursuant to Section 2109 or 2110 ~~with each report~~ as long as the sample size contains at least 30 vehicles.

If more than 1.0 percent (at least two vehicles) of the sample within an engine family has projected emissions which exceed the applicable standards by more than 2.33 standard deviations at the time of any evaluation of that family's average emissions, the manufacturer shall report such fact to the Executive Officer within ten working days. Within thirty working days the manufacturer shall submit: (a) an analysis of the projected average emissions for each engine code/transmission type/inertia weight and combination within that family; (b) an engineering evaluation of the cause of failure for each vehicle which exceeded the standard by more than 2.33 standard deviations; (c) the manufacturer's opinion as to the nature of the problem; and (d) any correction action proposed by the manufacturer.

The Executive Officer shall review the report, and may require that the proposed corrective action be taken. If, after review of the report, the Executive Officer finds the proposed corrective action inadequate, the Executive Officer may invoke Section 2109 or 2110, as appropriate.

Methane Content Correction Factor (MCCF)

1. For an engine family certified to the non-methane hydrocarbon standard (0.39) either: the measured total hydrocarbon value shall be multiplied by the non-methane deterioration factor (DF) and by a MCCF of 0.89 for passenger cars and 1.0 for trucks (or alternate value approved by the ARB). Or: The manufacturer may measure the non-methane hydrocarbon content which shall be multiplied by the non-methane deterioration factor (DF).

If more than 1.0 percent (at least two vehicles) of the sample within an engine family has projected emissions which exceed the applicable standards by more than 2.33 standard deviations at the time of any evaluation of that family's average emissions, the manufacturer shall report such fact to the Executive Officer within ten working days. Within thirty working days the manufacturer shall submit: (a) an analysis of the projected average emissions for each engine code/transmission type/inertia weight and combination within that family; (b) an engineering evaluation of the cause of failure for each vehicle which exceeded the standard by more than 2.33 standard deviations; (c) the manufacturer's opinion as to the nature of the problem; and (d) any correction action proposed by the manufacturer.

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2. For an engine family certified to the total hydrocarbon standard (0.41), the measured total hydrocarbon value shall be multiplied by the total hydrocarbon deterioration factor (DF) and by the MCCF of 0.89 for passenger cars and 1.0 for trucks (or other alternate values approved by the Executive Officer.)

4. Reports

Each vehicle manufacturer shall submit a report to the Air Resources Board within 45 calendar days after the end of each calendar quarter and 45 calendar days after the end of the production year. More frequent reports may be required if the Executive Officer invokes Section 2109 or 2110, Chapter 3, Title 13 of the California Administrative Code. Each vehicle manufacturer shall review the test results of the first 30 test vehicles of each engine family for each calendar quarter or production or from the start of production, and the quarter's cumulative test results of each engine family at the end of each month. If the sample size is 30 or more vehicles and either of the two conditions specified in the Evaluation Section are met, the Executive Officer shall be notified within 10 working days.

The quarterly report shall include the following:

(a) The total production and sample size for each engine family.

(b) A description of each test vehicle (i.e., date of test, engine family, engine size, vehicle identification number, fuel system (e.g., number of venturi, fuel injection, etc.), transmission type, inertia weight, true road load horsepower, and engine code or calibration number and test location).

(c) The CVS exhaust emission data ~~(including carbon dioxide data) for each test vehicle,~~ (corrected for methane, if applicable) and carbon dioxide data for each test vehicle ~~both before and after applying deterioration factors~~. The data reported shall be rounded to one significant figure beyond the number of significant figures in the applicable standard. Deterioration factors shall be stated, then applied to the data. The data reported after the deterioration factors are applied shall be rounded using the "rounding off method" specified in ASTM: E29-67 to the number of places to the right of the decimal point as follows:

	HC	CO	NOx	CO_2
Passenger cars	.XXX	.XX	.XX	.X
Trucks	.XX	.X		

(d) The retest emissions data as described in paragraph (c) above for any vehicles failing the initial test, and description of the corrective measures taken including specific components replaced or adjusted.

(e) A statistical analysis of the quality-audit test results for each engine family stating:

(1) Number of vehicles tested.

(2) Average emissions and standard deviation of the sample for hydrocarbons ~~each pollutant~~ (corrected for methane, if applicable), carbon monoxide and oxides of nitrogen, ~~including carbon dioxide,~~ both

(c) The CVS exhaust emission data ~~(including carbon dioxide data) for each test vehicle,~~ (corrected for methane, if applicable) and carbon dioxide data for each test vehicle ~~both before and after applying deterioration factors~~. The data reported shall be rounded to one significant figure beyond the number of significant figures in the applicable standard. Deterioration factors shall be stated, then applied to the data. The data reported after the deterioration factors are applied shall be rounded using the "rounding off method" specified in ASTM: E29-67 to the number of places to the right of the decimal point as follows:

	HC	CO	NOx	CO_2
Passenger cars	.XXX	.XX	.XX	.X
Trucks	.XX	.X		

(d) The retest emissions data as described in paragraph (c) above for any vehicles failing the initial test, and description of the corrective measures taken including specific components replaced or adjusted.

(e) A statistical analysis of the quality-audit test results for each engine family stating:

(1) Number of vehicles tested.

(2) Average emissions and standard deviation of the sample for hydrocarbons ~~each pollutant~~ (corrected for methane, if applicable), carbon monoxide and oxides of nitrogen, ~~including carbon dioxide,~~ both

before and after applying deterioration factors. In the latter case, the individual test points shall be multiplied by deterioration factors prior to computing the average and standard deviation. The average emissions and standard deviation of the sample for carbon dioxide shall also be listed.

~~(e) Group-A-and-Group-B-medium-duty-vehicles-shall-be-identified and-reported-separately.~~

(f) Since the manufacturer has the option of certifying vehicles with either non-methane or total hydrocarbon instrumentation, the specific method used for quality audit testing shall be indicated for each engine family.

(g) If both four-wheel and two-wheel drive vehicles are included in a light duty truck engine family under 4,000 pounds inertia weight, then quality audit test data from four-wheel drive vehicles shall be distinguished from the summarized separately from two-wheel drive vehicles.

(h) Control limits with AIR operating shall be calculated and reported for information purposes for those engine families that are tested without AIR in operation.

(i) The final report shall include the date of the end of the manufacturer's model production year for each engine family.

5. Special Requirements for Low Production Vehicle Manufacturers. The following requirements apply only to those vehicle manufacturers

who were granted relief, by the Executive Officer, under Title 13, California Administrative Code (C.A.C.) Section 1960.2 Special Standards for 1980 and 1981 Model Passenger Cars.

The requirements listed below are to be followed as supplemental to and when contrary to other requirements specified in part "C. Quality Audit Test Procedures," Section "3. Evaluation" and "4. Reports." These requirements are listed to implement, define and clarify the Board requirements of C.A.C. Section 1960.2:

a. Additional Reporting Requirements

(1) NOx Emissions

The cumulative average of oxides of nitrogen (NOx) emissions from the entire quality audit passenger car line shall be reported both before and after applying deterioration factors for:

(a) All 1980 model cars tested during each calendar quarter.

(b) All 1980 model cars tested to date by the end of each calendar quarter.

(c) All 1980 model cars tested to date by December 31, 1979, June 30, 1980 and by December 31, 1980.

(2) Subgroups

The NOx emission results shall be averaged and reported by engine family subgroup in each regular quarterly assembly-line report.

who were granted relief, by the Executive Officer, under Title 13, California Administrative Code (C.A.C.) Section 1960.2 Special Standards for 1980 and 1981 Model Passenger Cars.

The requirements listed below are to be followed as supplemental to and when contrary to other requirements specified in part "C. Quality Audit Test Procedures," Section "3. Evaluation" and "4. Reports." These requirements are listed to implement, define and clarify the Board requirements of C.A.C. Section 1960.2:

a. Additional Reporting Requirements

(1) NOx Emissions

The cumulative average of oxides of nitrogen (NOx) emissions from the entire quality audit passenger car line shall be reported both before and after applying deterioration factors for:

(a) All 1980 model cars tested during each calendar quarter.

(b) All 1980 model cars tested to date by the end of each calendar quarter.

(c) All 1980 model cars tested to date by December 31, 1979, June 30, 1980 and by December 31, 1980.

(2) Subgroups

The NOx emission results shall be averaged and reported by engine family subgroup in each regular quarterly assembly-line report.

(b) New Requirements

(1) Semi-Annual Evaluations

Joint ARB - manufacturer evaluations will be made each six months to determine compliance with the 1.0 gm/mi NOx production level based on accumulated test results from all 1980 cars tested. The first evaluation will be made based on averaged NOx test data accumulated through December 31, 1979. Subsequent evaluations will be made for data accumulated through June 30, 1980, and also for data accumulated through the end of the 1980 model year production. The cumulative NOx average shall be carried over to the manufacturer's entire 1981 model year passenger car line.

If the NOx value exceeds the 1.0 gm/mi level, but the manufacturer can show that unanticipated technical problems caused the 1.0 gm/mi NOx production average to be exceeded, the appropriate relief will be made available. The relief will be made provided the manufacturer shows reasonable effort was made and will continue to be made towards meeting the 1.0 gm/mi level for future production periods. This includes incorporating into production improved technology as soon as it becomes available.

After the evaluation, the Executive Officer can invoke Section 2109, Title 13 of the California Administrative Code if accumulated results exceed 1.0 gm/mi NOx and the manufacturer has not taken appropriate corrective action.

The reports required by this paragraph and paragraph B.4. should be sent to:

Chief, Mobile Source Control Division
California Air Resources Board
9528 E. Telstar Avenue
El Monte, CA 91731

DEFINITIONS

The definitions in Section 1900 (b), Chapter 3, Title 13 of the California Administrative Code shall apply with the following additions:

1. Calendar Quarter is defined as those three month periods of time which start on the 1st days of January, April, July and October.
2. First or Last Calendar Quarter Production is defined as the calendar quarter in which the production of an engine family begins or ends.
3. End of Assembly-Line is defined as that place where the final inspection test or quality audit test is performed.
4. Assembly-Line Tests are those tests or inspections which are performed at the end of the assembly-line.
5. Assembly-Line Quality Audit Test is defined as the test performed on a minimum sample of 2.0% of the production vehicles for sale in California.
6. Assembly-Line Inspection Tests are those steady-state and functional tests performed on production vehicles for sale in California.
7. Functional Test is defined as a type of test or inspection which is performed on engines or vehicles to detect if the emission control system is operating properly.

The reports required by this paragraph and paragraph B.4. should be sent to:

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State of California
AIR RESOURCES BOARD

California Assembly-Line Test Procedures for ~~1980~~ 1981 Model Year Passenger Cars. Light-Duty Trucks and Medium-Duty Vehicles

Adopted: December 19, 1979
Amended: March 5, 1980

Note: These procedures are printed in a style to emphasize the differences from the 1980 Assembly-Line Test Procedures as amended May 9, 1979. Additions are indicated by underlining and deletions are lined out with dashes. March 5, 1980 changes are listed in Part 5.

State of California

AIR RESOURCES BOARD

California Assembly-Line Test Procedures for ~~1980~~ 1981
Model Year Passenger Cars, Light-Duty
Trucks and Medium-Duty Vehicles

A. General Provisions

1. Applicability

These test procedures, adopted pursuant to Section 43210 of the California Health and Safety Code, are applicable to vehicle manufacturers of ~~1980~~ 1981 model year gasoline and diesel powered passenger cars, light-duty trucks, and medium-duty vehicles having an engine displacement of 50 cubic inches (820 cubic centimeters) or greater, except motorcycles, subject to registration and manufactured for sale in California.

2. Compliance

The procedures specify two types of tests: (1) a short inspection test to be applied to every vehicle before sale, and (2) a quality audit test according to the "California Exhaust Emission Standards and Test Procedures for ~~1980~~ 1981 Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles." A vehicle is in compliance with these assembly-line standards and test procedures when that vehicle is in compliance with the inspection test requirements and that vehicle's engine family is in compliance with the quality audit test requirements. Since quality audit evaluations occur less

frequently than the inspection tests, a vehicle which passes the inspection test may be presumed to be in compliance with the full assembly-line procedures pending meeting the quality audit evaluation of that vehicle's engine family.

3. Decal

Section 43200 of the Health and Safety Code requires manufacturers to affix a window decal in accordance with specific requirements. No vehicle subject to these test procedures may be sold and registered in this state which is not in compliance with the requirements of Section 43200 and this paragraph.

For vehicles manufactured during the first calendar quarter of model production and not to exceed 45 calendar days thereafter, the exhaust emissions shown on the window decal shall be the highest values from the engine family emission data fleet passing certification. Not more than 45 calendar days after the first quarter and each succeeding calendar quarter of production, the exhaust emissions shown on the window decal shall be the average quality audit

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For vehicles manufactured during the first calendar quarter of model production and not to exceed 45 calendar days thereafter, the exhaust emissions shown on the window decal shall be the highest values from the engine family emission data fleet passing certification. Not more than 45 calendar days after the first quarter and each succeeding calendar quarter of production, the exhaust emissions shown on the window decal shall be the average quality audit

values for the engine family during the previous calendar quarter of production. These values shall include the deterioration factor. During the second calendar quarter, however, the manufacturer may continue using the decal showing the highest values from the engine family emission data fleet, if the first calendar quarter is a short production period (less than a full calendar quarter). For engine families certified by carry-over, the emission data values from the last full quarter of the previous year's production may be used. For a model-year build-out production period, the decal emission values used for the previous production quarter may be used. Each vehicle emission decal shall have the following statement displayed thereon:

"This vehicle has been tested under and conforms to California Assembly-Line Test Requirements."

4. Access

Air Resources Board personnel and mobile laboratories shall have access to vehicle assembly plants, distribution facilities and test facilities for the purpose of vehicle selection, testing and observation. Scheduling of access shall be arranged with the designated manufacturer's representative and shall not unreasonably disturb normal operations.

5. Variations and Exemptions

Variations from these procedures which produce substantially equivalent results may be authorized by the Executive Officer. In extraordinary circumstances where compliance with these procedures is not possible or practicable, a manufacturer may appeal to the Air Resources Board for a temporary exemption.

B. Inspection Test Procedures

This inspection test shall be performed on all vehicles subject to these test procedures.

1. Inspection Test Procedures

(a) Functional Test

Functional tests of the engine components and control systems which affect emissions shall be made prior to the steady-state emissions tests. If a vehicle fails one or more functional tests, it must be repaired and pass a functional retest before it can be emission tested.

A list of the items to be functionally checked and a procedure for performing these checks shall be submitted to the Executive Officer prior to the start of production. Within 60 days of its receipt the Executive Officer may require revisions to the proposal.

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Variations from these procedures which produce substantially equivalent results may be authorized by the Executive Officer. In extraordinary circumstances where compliance with these procedures is not possible or practicable, a manufacturer may appeal to the Air Resources Board for a temporary exemption.

B. Inspection Test Procedures

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1. Inspection Test Procedures

(a) Functional Test

Functional tests of the engine components and control systems which affect emissions shall be made prior to the steady-state emissions tests. If a vehicle fails one or more functional tests, it must be repaired and pass a functional retest before it can be emission tested.

A list of the items to be functionally checked and a procedure for performing these checks shall be submitted to the Executive Officer prior to the start of production. Within 60 days of its receipt the Executive Officer may require revisions to the proposal.

(b) Steady State Emissions Test

The vehicle engine shall be adjusted to the manufacturer's specifications for delivery to the customer prior to the steady-state emissions test. This test shall consist of a determination of HC and CO exhaust concentrations with the engine operating in a normal idle condition. All tests, including those of control limit test vehicles, shall be conducted as follows:

(1) Vehicles shall be tested in the normal "warmed-up" operating temperature range, i.e., after the choke is fully open and the engine is at curb idle speed, but before thermal override devices are actuated to prevent overheating. The test may be performed in any transmission gear; however the same gear shall be used for control limit test vehicles and production vehicles. For each engine family, the idle test may be performed without AIR provided that the control limit vehicles are tested both with and without AIR. The requirements of section B.(3)(g) must be met with AIR.

The control limit test vehicles and all production vehicles should be warmed-up and tested in the same manner.

(2) The sampling probes of the analytical system shall be inserted into the exhaust outlets far enough to avoid dilution with the outside air. Where this is not possible, a tailpipe extension shall be used.

(3) A vehicle which fails a steady-state emissions test shall be retested or repaired and shall pass on retest prior to sale.

2. Evaluation

Any vehicle tested by the steady-state emissions test showing emissions less than the control limits established for its engine family or subgroup and which had previously passed the functional tests will be considered to be in compliance with the inspection test requirements.

3. Control Limits

The control limits for each engine family or subgroup at the start of a model year will be determined as follows:

(a) Measure the emissions from the first 100 vehicles of each engine family or subgroup tested by the steady-state assembly-line inspection test.

(b) Determine the mean emission level and standard deviation for each pollutant (HC and CO).

(c) The control limit for each pollutant is the sum of the mean plus two times the standard deviation for that pollutant.

(d) Until the first control limits are established the manufacturer shall use temporary control limits based on the first ten tests. These ten vehicles are deemed to meet the control limits so established.

(3) A vehicle which fails a steady-state emissions test shall be retested or repaired and shall pass on retest prior to sale.

2. Evaluation

Any vehicle tested by the steady-state emissions test showing emissions less than the control limits established for its engine family or subgroup and which had previously passed the functional tests will be considered to be in compliance with the inspection test requirements.

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(b) Determine the mean emission level and standard deviation for each pollutant (HC and CO).

(c) The control limit for each pollutant is the sum of the mean plus two times the standard deviation for that pollutant.

(d) Until the first control limits are established the manufacturer shall use temporary control limits based on the first ten tests. These ten vehicles are deemed to meet the control limits so established.

(e) (i) For control systems that do not use catalytic converters - If the HC control limit value is determined in subparagraph (c) is less than 100 ppm, the HC control limit value may be increased by up to 50 ppm, not to exceed 100 ppm. If the CO control limit determined in subparagraph (c) is less than 1.0 percent, the CO control limit may be increased by up to 0.5 percent, not to exceed 1.0 percent.

(ii) For control systems that use catalytic converters - If the HC control limit value determined in subparagraph (c) is less than 50 ppm, the control limit value may be increased by up to 30 ppm, not to exceed 50 ppm.

If the CO control limit determined in subparagraph (c) is less than 0.5 percent, the CO control limit may be increased by up to 0.3 percent, not to exceed 0.5 percent.

(f) Idle control limit values may be rounded to the nearest 10 ppm HC and 0.1 percent CO in conformance to ASTM E29-67 except where this would result in a zero value.

(g) The maximum allowable steady-state control limits for HC and CO are those values used as the idle mode standard shown in Section 2176, Title 13 of the California Administrative Code for the ~~1980~~ 1981 model-year. An exemption to this requirement will be granted providing the manufacturer submits emission data with each quarterly report listed in one of the options below:

(1) Submit with each quarterly assembly-line report HC and CO emission values measured at engine idle speed for each quality audit vehicle tested and the computed mean and standard deviation of HC and CO emission results for the total number of vehicles tested, by engine family. Measurements of HC and CO shall be conducted immediately following completion of the dynamometer run and vehicles shall be in a state described under B.1 (b) (1) above. If less than 30 vehicles were quality audit tested during the reporting quarter the computation of the means and standards deviation are not required.

(2) Submit quarterly HC and CO emission values measured at engine idle speed for a minimum of 30 vehicles in the engine family or sub-group immediately after these vehicles have complied with the assembly-line inspection procedures and have either been run-in a distance of 50 miles (on the road or dynamometer) or after other appropriate engine break-in has been performed and the engine is operating at a fully warmed-up condition as described in B.1 (b) (1) above. In addition to emission results of individual vehicles, the mean and standard deviation shall be computed and submitted.

(3) The manufacturer may propose other methods to achieve results equivalent to the two options above. These emission data shall be obtained from stabilized vehicles which have emission control systems with no defects and are properly adjusted to manufacturers specifications.

(h) Control limits with AIR operating shall be calculated and reported for information purposes for those engine families that are tested without AIR in operation.

(1) Submit with each quarterly assembly-line report HC and CO emission values measured at engine idle speed for each quality audit vehicle tested and the computed mean and standard deviation of HC and CO emission results for the total number of vehicles tested, by engine family. Measurements of HC and CO shall be conducted immediately following completion of the dynamometer run and vehicles shall be in a state described under B.1 (b) (1) above. If less than 30 vehicles were quality audit tested during the reporting quarter the computation of the means and standards deviation are not required.

(2) Submit quarterly HC and CO emission values measured at engine idle speed for a minimum of 30 vehicles in the engine family or sub-group immediately after these vehicles have complied with the assembly-line inspection procedures and have either been run-in a distance of 50 miles (on the road or dynamometer) or after other appropriate engine break-in has been performed and the engine is operating at a fully warmed-up condition as described in B.1 (b) (1) above. In addition to emission results of individual vehicles, the mean and standard deviation shall be computed and submitted.

(3) The manufacturer may propose other methods to achieve results equivalent to the two options above. These emission data shall be obtained from stabilized vehicles which have emission control systems with no defects and are properly adjusted to manufacturers specifications.

(h) Control limits with AIR operating shall be calculated and reported for information purposes for those engine families that are tested without AIR in operation.

Control limit values shall be recalculated for each production quarter based on the measured emissions from at least 100 vehicles produced during the last half of the preceding quarter of production for each engine family or subgroup tested by the steady-state emissions test. When production levels do not permit compliance with the above, data from vehicles produced during the first half of the preceding quarter may be used. If the quarterly production of any engine family is less than 100 vehicles, the manufacturer shall use the test results from all vehicles produced during that quarter in determining the control limit values for the next quarter.

The Executive Officer shall be notified within one week if control limit values are recalculated following running changes which affect idle emissions levels. The new control limit values and the date they first went into effect shall be part of the notification.

All testing, reports, evaluations, etc. shall be by engine family except when the Executive Officer has approved a breakdown by subgroups (e.g., different carburetors, engine displacements, control systems, transmissions, and inertia weights), by assembly plant, or both.

Note: Data from any vehicle indicating gross engine malfunction, and/or failure or disconnection of any emission control component, shall be excluded from that used for generating control limits. Retest data on vehicles exceeding the control limits shall not be used in determining control limits for subsequent quarters.

4. Reports

Reports shall be submitted to the Air Resources Board within 45 calendar days of the end of each calendar quarter and within 45 calendar days of the end of the manufacturer's model production year. Results for two different model years shall not be combined statistically.

The report shall include:

(a) The temporary quarterly control limit values obtained for the first quarter of production.

(b) The mean and the standard deviation of the steady-state emissions tests used to determine the quarterly control limits.

(c) The steady-state control limit values for the next quarter's production.

(d) For each engine family or sub-group, the number and percentage of vehicles for each assembly plant:

(1) failing the first test

(2) repaired or adjusted.

All HC values should be stated as hexane equivalents for NDIR measurement and ppm carbon if a flame ionization detector is used. The hexane equivalent conversion value shall be supplied for each different model of flame ionization detector used and for each engine family.

C. Quality Audit Test Procedures

1. Standards and Test Procedures

The emission standards and the exhaust sampling and analytical procedures shall be those described in the "California Exhaust

4. Reports

Reports shall be submitted to the Air Resources Board within 45 calendar days of the end of each calendar quarter and within 45 calendar days of the end of the manufacturer's model production year. Results for two different model years shall not be combined statistically.

The report shall include:

(a) The temporary quarterly control limit values obtained for the first quarter of production.

(b) The mean and the standard deviation of the steady-state emissions tests used to determine the quarterly control limits.

(c) The steady-state control limit values for the next quarter's production.

(d) For each engine family or sub-group, the number and percentage of vehicles for each assembly plant:

(1) failing the first test

(2) repaired or adjusted.

All HC values should be stated as hexane equivalents for NDIR measurement and ppm carbon if a flame ionization detector is used. The hexane equivalent conversion value shall be supplied for each different model of flame ionization detector used and for each engine family.

C. Quality Audit Test Procedures

1. Standards and Test Procedures

The emission standards and the exhaust sampling and analytical procedures shall be those described in the "California Exhaust

Emission Standards and Test Procedures for ~~1980~~ 1981 Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles" applicable to vehicles tested for exhaust emissions only, with the following exceptions or additions:

(a) After the inspection tests, no emissions tests may be performed on a quality-audit vehicle prior to the first quality audit test, except where such tests are run on all vehicles manufactured for sale in California.

(b) The vehicle shall begin the test sequence as received from the inspection test, except for mileage accumulation or engine run-in. The schedule for mileage accumulation or engine run-in and any changes to the schedule must be submitted to the Executive Officer with each quarterly report. This schedule must be adhered to for all quality audit testing within an engine family and subgroup or engine family and assembly plant as appropriate.

(c) A new carbon canister may be installed on the vehicle at the start of the test sequence. The test sequence shall consist of one Urban Dynamometer Driving Schedule (UDDS) test procedure, followed by a cold-soak and CVS test. The Federal test procedure requirement, consisting of heating the fuel before the CVS test, is to be omitted. The manufacturer may request permission to use an alternate preconditioning procedure provided the manufacturer demonstrates that it will not affect the loading of the carbon canister when compared with the UDDS.

(d) Except as provided in paragraph C.1.(f) below, no vehicle selected for quality audit testing shall be repaired or adjusted after passing the inspection test except for a vehicle that: (1) is not testable, e.g. cannot be started, transmission or brakes lock-up, (2) is not reasonably operative, e.g. some transmission gears not functioning, (3) is unsafe to test, or (4) would be damaged by testing.

Each adjustment or repair performed on a vehicle prior to each test shall be included in the regular quarterly reports. The vehicle condition and symptoms and reason(s) for each repair or adjustment shall also be listed.

~~(d)~~ (e) If a vehicle is shipped to a remote facility for quality audit testing, correction of damage or maladjustment, which ~~may reasonably be~~ is found to have resulted from shipment of the vehicle, is permitted only after the initial test of the vehicle, except as provided in paragraph (d) above. ~~for compelling reasons. Compelling reasons are that the vehicle is not testable, or is not reasonable operative, or is not safe to drive, or that damage to the vehicle would be likely if the vehicle were tested.~~

All adjustments or repairs performed on vehicles prior to each test

(d) Except as provided in paragraph C.1.(f) below, no vehicle selected for quality audit testing shall be repaired or adjusted after passing the inspection test except for a vehicle that: (1) is not testable, e.g. cannot be started, transmission or brakes lock-up, (2) is not reasonably operative, e.g. some transmission gears not functioning, (3) is unsafe to test, or (4) would be damaged by testing.

Each adjustment or repair performed on a vehicle prior to each test shall be included in the regular quarterly reports. The vehicle condition and symptoms and reason(s) for each repair or adjustment shall also be listed.

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All adjustments or repairs performed on vehicles prior to each test

shall be reported to the Executive Officer by inclusion in the quarterly report. The vehicle condition and symptoms and reason(s) for each repair or adjustment shall also be listed. In the event a retest is performed application may be made to the Executive Officer for permission to substitute the after-repair test results for the original test results. The Executive Officer will either affirm or deny the application. ~~within-ten-working-days.~~ When requested by the manufacturer, no more than 10 days after the production quarter, response from the Executive Officer will be within 10 working days.

(f) If a vehicle is shipped to a remote facility for quality audit testing, no pre-delivery type inspection, adjustment or repair of vehicles selected for quality audit is allowed except as follows: if subsequent to shipping from the assembly-line, the manufacturer performs the particular inspection and correction of damage or maladjustment at designated preparation facility locations for all vehicles produced and the manufacturer's written inspection instructions are approved by the Executive Officer, then these specific inspections and corrections will be allowed prior to testing quality audit vehicles.

~~However,-if-100%-of-the-manufacturer's-production-is-given-a particular-correction-of-damage-or-maladjustment-by-the-manufacturer's~~

~~own-personnel-subsequent-to-consignment-for-shipping-from-that manufacturer's-assembly-line,-that-same-correction-of-damage or-maladjustment-will-be-allowed-prior-to-initial-testing-to-the specific-vehicles-randomly-selected-for-testing,-provided-the manufacturer's-written-instructions-are-submitted-to-the-Executive Officer.~~

(g) If the emission test results of a vehicle are determined to be invalid by the manufacturer, the vehicle must be retested. Emission results from all tests shall be reported. A detailed report on the reasons for each invalidated test shall be included in the quarterly report.

2. Vehicle Sample Selection

The vehicle manufacturer shall randomly select vehicles within each engine family for quality audit testing. Each selected vehicle for quality audit testing must pass the inspection test, be equipped with emission control systems certified by the ARB, and be representative of the manufacturer's California sales. The procedure for randomly selecting vehicles must be submitted to the Executive Officer prior to production.

A continuous sample rate shall be chosen by the manufacturer to provide a sample which is representative of the total production. The manufacturer shall select a sample rate which he or she determines will be satisfactory for use by the Air Resources Board in determining the number of vehicles in the entire population of a particular engine

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A continuous sample rate shall be chosen by the manufacturer to provide a sample which is representative of the total production. The manufacturer shall select a sample rate which he or she determines will be satisfactory for use by the Air Resources Board in determining the number of vehicles in the entire population of a particular engine

family which do not meet Board established emission standards by extrapolation from the percentage of the sample not meeting the standards. The results from the sample may be extrapolated to the entire population subject to the provisions relating to vehicle exclusion contained in Paragraph 3 below. The sample rate so chosen shall not be less than 2.0%. The manufacturer shall notify the Executive Officer of any changes to the sample rate. The date of such change shall be reported in accordance with Paragraph 4 below.

Four wheel drive vehicles which can be manually shifted to a two wheel drive mode will be tested in the normal on-highway two wheel drive mode of operation. If full time four wheel drive vehicles are selected, substitutions may be made with comparable two wheel drive vehicles of the same engine family. If comparable two wheel drive vehicles are not available, selected full time four wheel drive vehicles will be tested after having the front drive wheels temporarily disengaged or the front end of the vehicle elevated.

The Executive Officer may, upon notice to the manufacturer, require the sample rate to be increased to a maximum of ten percent of production (not to exceed 30 additional vehicles) of the calendar quarterly production of any engine family by invoking Section 2110, Chapter 3, Title 13 of the California Administrative Code.

3. Evaluation

The evaluation shall be performed on sample sizes containing 30 or more vehicles. If a sample size for a particular production quarter is less than 30 vehicles, the data from that quarter shall

be combined with the data from each successive quarter until at least 30 vehicles have been quality-audit tested. If the sample size for the last quarter's production does not contain at least 30 vehicles, the data from the last quarter shall be combined with each preceding quarter until the sample size contains at least 30 vehicles. For an engine family which contains both light-duty trucks and medium-duty vehicles, all references in this test procedure to engine family shall mean light-duty truck subgroup or medium-duty vehicle subgroup.

Based upon additional information submitted by a manufacturer, the Executive Officer may allow rejection of any data from vehicles if they are considered to be not representative of production.

For each production quarter if 30 or more vehicles are tested, the ARB shall consider that probable cause exists for finding a violation by any engine family if the average emissions of any pollutant, after multiplying the emission data of each vehicle by the appropriate certification deterioration factor, ~~and the assigned methane content correction factor (for hydrocarbons only),~~ exceed the applicable ~~1980~~ 1981 exhaust emission standards, when rounded to the same number of significant digits as the standard.

The Executive Officer may invoke Section 2109, Chapter 3, Title 13 of the California Administrative Code if probable cause is found for a full or combined production quarter. The Executive Officer may invoke Section 2110, Chapter 3, Title 13 of the California

be combined with the data from each successive quarter until at least 30 vehicles have been quality-audit tested. If the sample size for the last quarter's production does not contain at least 30 vehicles, the data from the last quarter shall be combined with each preceding quarter until the sample size contains at least 30 vehicles. For an engine family which contains both light-duty trucks and medium-duty vehicles, all references in this test procedure to engine family shall mean light-duty truck subgroup or medium-duty vehicle subgroup.

Based upon additional information submitted by a manufacturer, the Executive Officer may allow rejection of any data from vehicles if they are considered to be not representative of production.

For each production quarter if 30 or more vehicles are tested, the ARB shall consider that probable cause exists for finding a violation by any engine family if the average emissions of any pollutant, after multiplying the emission data of each vehicle by the appropriate certification deterioration factor, ~~and the assigned methane content correction factor (for hydrocarbons only),~~ exceed the applicable ~~1980~~ 1981 exhaust emission standards, when rounded to the same number of significant digits as the standard.

The Executive Officer may invoke Section 2109, Chapter 3, Title 13 of the California Administrative Code if probable cause is found for a full or combined production quarter. The Executive Officer may invoke Section 2110, Chapter 3, Title 13 of the California

Administrative Code if probable cause is found for a short start-up production period (less than a full calendar quarter), for the first thirty vehicles quality audit tested during any production quarter or from the start of production, or for vehicles evaluated in accordance with the monthly evalution required by paragraph 4 below. In addition, the ARB may seek statutory penalties pursuant to Sections 43211 and 43212 of the California Health and Safety Code at the end of each full or combined calendar quarter of production.

If the Executive Officer invokes Section 2109 or 2110, an evaluation will be made on vehicles produced subsequent to the invocation of a plan adopted pursuant to Section 2109 or 2110 as long as the sample size contains at least 30 vehicles.

If more than 1.0 percent (at least two vehicles) of the sample within an engine family has projected emissions which exceed the applicable standards by more than 2.33 standard deviations at the time of any evaluation of that family's average emissions, the manufacturer shall report such fact to the Executive Officer within 10 working days. Within 30 working days the manufacturer shall submit: (a) an analysis of the projected average emissions for each engine code/transmission type/inertia weight combination within that family; (b) an engineering evaluation of the cause of failure for each vehicle which exceeded the standard by more than 2.33 standard deviations; (c) the manufacturer's opinion as to the nature of the problem; and (d) any corrective action proposed by the manufacturer.

The Executive Officer shall review the report, and may require that the proposed corrective action be taken. If, after review of the report, the Executive Officer finds the proposed corrective action inadequate, the Executive Officer may invoke Section 2109 or 2110, as appropriate.

Non-Methane or Total Hydrocarbon Measurements
~~Methane-Content-Correction-Factor-(MCCF)~~

1. For an engine family certified to the non-methane hydrocarbon standard ~~(0.39)-either:-the-measured-total-hydrocarbon-value shall-be-multiplied-by-the-non--methane-deterioration-factor (DF)-and-by-a-MCCF-of-0.89-for-passenger-cars-and-1.0-for-trucks (or-alternate-value-approved-by-the-ARB).-Or:~~ the manufacturer shall ~~may~~ measure the non-methane hydrocarbon content which shall be multiplied by the non-methane deterioration factor (DF).

2. For an engine family certified to the total hydrocarbon standard, ~~(0.41)~~, the measured total hydrocarbon value shall be multiplied by the total hydrocarbon deterioration factor (DF). ~~and-by-the-MCCF-of-0.89-for-passenger-cars-and 1.0-for-trucks-(or-other-alternate-values-approved-by-the Executive-Officer.)~~

4. Reports

Each vehicle manufacturer shall submit a report to the Air Resources Board within 45 calendar days after the end of each calender quarter and 45 calendar days after the end of the production year. More

The Executive Officer shall review the report, and may require that the proposed corrective action be taken. If, after review of the report, the Executive Officer finds the proposed corrective action inadequate, the Executive Officer may invoke Section 2109 or 2110, as appropriate.

Non-Methane or Total Hydrocarbon Measurements
~~Methane-Content-Correction-Factor-(MCCF)~~

1. For an engine family certified to the non-methane hydrocarbon standard ~~(0.39)-either:-the-measured-total-hydrocarbon-value shall-be-multiplied-by-the-non--methane-deterioration-factor (DF)-and-by-a-MCCF-of-0.89-for-passenger-cars-and-1.0-for-trucks (or-alternate-value-approved-by-the-ARB).-Or:~~ the manufacturer shall ~~may~~ measure the non-methane hydrocarbon content which shall be multiplied by the non-methane deterioration factor (DF).

2. For an engine family certified to the total hydrocarbon standard, ~~(0.41)~~, the measured total hydrocarbon value shall be multiplied by the total hydrocarbon deterioration factor (DF). ~~and-by-the-MCCF-of-0.89-for-passenger-cars-and 1.0-for-trucks-(or-other-alternate-values-approved-by-the Executive-Officer.)~~

4. Reports

Each vehicle manufacturer shall submit a report to the Air Resources Board within 45 calendar days after the end of each calender quarter and 45 calendar days after the end of the production year. More

frequent reports may be required if the Executive Officer invokes Section 2109 or 2110, Chapter 3, Title 13 of the California Administrative Code. Each vehicle manufacturer shall review the test results of the first 30 test vehicles of each engine family for each calendar quarter of production or from the start of production, and the quarter's cumulative test results of each engine family at the end of each month. If the sample size is 30 or more vehicles and either of the two conditions specified in the Evaluation Section are met, the Executive Officer shall be notified within 10 working days.

The quarterly report shall include the following:

(a) The total production and sample size for each engine family.

(b) A description of each test vehicle ((i.e., data of test, engine family, engine size, vehicle identification number, fuel system (e.g., number of venturi, fuel injection, etc.), transmission type, test ~~inertia~~ weight used, dynamometer power absorber setting in horsepower, engine code or calibration number and test location)).

(c) The CVS exhaust emission data ~~(corrected for methane, if applicable)~~ and carbon dioxide data for each test vehicle. The data reported shall be rounded to one significant figure beyond the number of significant figures in the applicable standard. Deterioration

factors shall be stated, then applied to the data. The data reported after the deterioration factors are applied shall be rounded using the "rounding off method" specified in ASTM: E29-67 to the number of places to the right of the decimal point as follows for all vehicles:

	HC	CO	NOx	CO_2
~~Passenger-cars~~	~~.XXX~~	~~.XX~~	~~.XX~~	~~.X~~
~~Trucks~~	~~.XX~~	~~.X~~		

(d) The retest emissions data as described in paragraph (c) above for any vehicles failing the initial test, and description of the corrective measures taken including specific components replaced or adjusted.

(e) A statistical analysis of the quality-audit test results for each engine family stating:

(1) Number of vehicles tested.

(2) Average emissions and standard deviation of the sample for hydrocarbons ~~(corrected for methane, if applicable)~~, carbon monoxide and oxides of nitrogen both before and after applying deterioration factors. In the latter case, the individual test points shall be multiplied by deterioration factors prior to computing the average and standard deviation. The average emissions and standard deviation of the sample for carbon dioxide shall also be listed.

factors shall be stated, then applied to the data. The data reported after the deterioration factors are applied shall be rounded using the "rounding off method" specified in ASTM: E29-67 to the number of places to the right of the decimal point as follows for all vehicles:

	HC	CO	NOx	CO_2
~~Passenger-cars~~	~~.XXX~~	~~.XX~~	~~.XX~~	~~.X~~
~~Trucks~~	~~.XX~~	~~.X~~		

(d) The retest emissions data as described in paragraph (c) above for any vehicles failing the initial test, and description of the corrective measures taken including specific components replaced or adjusted.

(e) A statistical analysis of the quality-audit test results for each engine family stating:

(1) Number of vehicles tested.

(2) Average emissions and standard deviation of the sample for hydrocarbons ~~(corrected for methane, if applicable)~~, carbon monoxide and oxides of nitrogen both before and after applying deterioration factors. In the latter case, the individual test points shall be multiplied by deterioration factors prior to computing the average and standard deviation. The average emissions and standard deviation of the sample for carbon dioxide shall also be listed.

(3) The applicable exhaust emission standards to be met, listing specific options selected and designating when 100,000 mile standards apply and where non-methane or total hydrocarbon standards apply.

~~(f) Since the manufacturer has the option of certifying vehicles with either non-methane or total hydrocarbon instrumentation, the specific method used for quality audit testing shall be indicated for each engine family.~~

(f) Every aborted test and reason for abort shall be reported.

(g) If both four-wheel and two-wheel drive vehicles are included in a light duty truck engine family under 4,000 pounds inertia weight, then quality audit test data from four-wheel drive vehicles shall be distinguished from and summarized separately from two-wheel drive vehicles.

(h) Control limits with AIR operating shall be calculated and reported for information purposes for those engine families that are tested without AIR in operation.

(i) The final report shall include the date of the end of the manufacturer's model production year for each engine family.

5. Special Requirements for Low Production Vehicle Manufacturers.

The following requirements apply only to those vehicle manufacturers who were granted relief, by the Executive Officer, under Title 13, California Administrative Code (C.A.C.) Section 1960.2 Special Standards for 1980 and 1981 Model Passenger Cars.

The requirements listed below are to be followed as supplemental to and when contrary to other requirements specified in part "C. Quality Audit Test Procedures," Section "3. Evaluation" and "4. Reports." These requirements are listed to implement, define and clarify the Board requirements of C.A.C. Section 1960.2:

a. Additional Reporting Requirements

(1) NOx Emissions

The cumulative average of oxides of nitrogen (NOx) emissions from the entire quality audit passenger car line shall be reported both before and after applying deterioration factors for:

(a) All 1981 model cars tested during each calendar quarter.

(b) All 1981 model cars tested to date by the end of each calendar quarter.

5. Special Requirements for Low Production Vehicle Manufacturers.

The following requirements apply only to those vehicle manufacturers who were granted relief, by the Executive Officer, under Title 13, California Administrative Code (C.A.C.) Section 1960.2 Special Standards for 1980 and 1981 Model Passenger Cars.

The requirements listed below are to be followed as supplemental to and when contrary to other requirements specified in part "C. Quality Audit Test Procedures," Section "3. Evaluation" and "4. Reports." These requirements are listed to implement, define and clarify the Board requirements of C.A.C. Section 1960.2:

a. Additional Reporting Requirements

(1) NOx Emissions

The cumulative average of oxides of nitrogen (NOx) emissions from the entire quality audit passenger car line shall be reported both before and after applying deterioration factors for:

(a) All 1981 model cars tested during each calendar quarter.

(b) All 1981 model cars tested to date by the end of each calendar quarter.

(c) All 1980 and 1981 model cars tested to date by the end of each calendar quarter.

(d) All 1980 and 1981 model cars tested to date by December 31, 1980, by June 30, 1981 and by December 31, 1981.

(2) Subgroups

The NOx emission results shall be averaged and reported by engine family subgroup in each regular quarterly assembly-line report.

b. Semi-Annual Evaluations

Joint ARB - manufacturer evaluations will be made each six months to determine compliance with the 1.0 gm/mi NOx production level based on accumulated test results from all 1980 and 1981 cars tested. The first evaluation will be made based on averaged NOx test data accumulated through December 31, 1980. Subsequent evaluations will be made for data accumulated through June 30, 1981 and also for data accumulated through the end of the 1981 model year production respectively.

If the NOx value exceeds the 1.0 gm/mi level, but the manufacturer shows that unanticipated technical problems caused the 1.0 gm/mi NOx production average to be

exceeded, then appropriate relief will be made available. The relief will be made provided the manufacturer shows reasonable effort was made and will continue to be made towards meeting the 1.0 gm/mi level for future production periods. This includes incorporating into production improved technology as soon as it becomes available.

After the evaluation, the Executive Officer can invoke Section 2109, Title 13 of the California Administrative Code if accumulated results exceed 1.0 gm/mi NOx and the manufacture has not taken appropriate corrective action.

c. Deterioration Factors

For 1981 model passenger cars, deterioration factors, which are more representative of cars to be produced, than those obtained with prototype cars during certification tests, shall be determined by the Executive Officer. In establishing the deterioration factors, certification and engineering data for similar vehicles will be considered provided the manufacturer shows these data to be more representative of car configurations and emission control systems to be produced.

exceeded, then appropriate relief will be made available. The relief will be made provided the manufacturer shows reasonable effort was made and will continue to be made towards meeting the 1.0 gm/mi level for future production periods. This includes incorporating into production improved technology as soon as it becomes available.

After the evaluation, the Executive Officer can invoke Section 2109, Title 13 of the California Administrative Code if accumulated results exceed 1.0 gm/mi NOx and the manufacture has not taken appropriate corrective action.

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The reports required by this paragraph and paragraph B.4. should be sent to:

Chief, Mobile Source Control Division
~~Vehicle-Emissions-Control-Division~~
California Air Resources Board
9528 Telstar Avenue
El Monte, CA 91731

DEFINITIONS

The definitions in Section 1900 (b), Chapter 3, Title 13 of the California Administrative Code shall apply with the following additions:

1. Calendar Quarter is defined as those three month periods of time which start on the 1st days of January, April, July and October.
2. First or Last Calendar Quarter Production is defined as the calendar quarter in which the production of an engine family begins or ends.
3. End of Assembly-Line is defined as that place where the final inspection test or quality audit test is performed.
4. Assembly-Line Tests are those tests or inspections which are performed at the end of the assembly-line.
5. Assembly-Line Quality Audit Test is defined as the test performed on a minimum sample of 2.0% of the production vehicles for sale in California.
6. Assembly-Line Inspection Tests are those steady-state and functional tests performed on production vehicles for sale in California.
7. Functional Test is defined as a type of test or inspection which is performed on engines or vehicles to detect if the emission control system is operating properly.
8. Gross Engine Malfunction is defined as one yielding an emission value greater than the sum of the mean plus three (3) times the standard deviation. This definition shall apply only for determination of control limits.

State of California
AIR RESOURCES BOARD

Note: These procedures have been extracted from the "California Exhaust Emission Standards and Test Procedures for 1980 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," adopted November 23, 1976, as last amended April 10, 1979.

These procedures are printed in a style to indicate the adopted changes. New text is underlined and deleted portions are noted.

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 1980 MODEL PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES

Adopted: May 24, 1978
Amended: September 6, 1978
Amended: February 9, 1979
Amended: May 22, 1979
Amended: March 5, 1980

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 1980 MODEL PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES

The provisions of Subparts A and B, Part 86, Title 40, Code of Federal Regulations, as they existed on April 15, 1978, are hereby adopted as the California Exhaust Emission Standards and Test Procedures for 1980 Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles, with the following exceptions and additions:

1. Applicability

   a. These test procedures are applicable to 1980 model passenger cars, light-duty trucks and medium-duty vehicles, except motorcycles. References to "light-duty trucks" in 40 CFR 86 shall apply both to "light-duty trucks" and "medium-duty vehicles" in these procedures.

   b. Any reference to vehicle sales throughout the United States shall mean vehicle sales in California.

   c. Regulations concerning EPA hearings, EPA inspections, specific language on the Certificate of Conformity, evaporative emissions, high-altitude vehicles and testing, and heavy-duty engines and vehicles shall not be applicable to these procedures, except where specifically noted.

2. Definitions

   a. "Administrator" means the Executive Officer of the Air Resources Board.

   b. "Certificate of Conformity" means Executive Order certifying vehicles for sale in California.

   c. "Certification" means certification as defined in Section 39018 of the Health and Safety Code.

   d. "Passenger car" means any motor vehicle designed primarily for transportation of persons and having a capacity of twelve persons or less.

e. "Heavy-duty engine" means an engine which is used to propel a heavy-duty vehicle.

f. "Heavy-duty vehicle" means any motor vehicle having a manufacturer's gross vehicle weight rating greater than 6,000 pounds, except passenger cars.

g. "Light-duty truck" means any motor vehicle, rated at 6,000 pounds gross vehicle weight or less, which is designed primarily for purposes of transportation of property or is a derivative of such a vehicle, or is available with special features enabling off-street or off-highway operation and use.

h. "Medium-duty vehicle" means any heavy-duty vehicle having a manufacturer's gross vehicle weight rating of 8500 pounds or less.

3. Test Procedures

Subparagraphs 3 (e), (f), (g), and (h) below do not apply to 1980 model light-duty trucks and medium-duty vehicles.

a. In order to demonstrate compliance with a non-methane hydrocarbon emission standard, hydrocarbon emissions shall be measured in accordance with the "California Non-Methane Hydrocarbon Test Procedures."

In the alternative, a manufacturer may correct the total measured hydrocarbons with a methane content correction factor. This factor shall be 0.89 for gasoline-fueled passenger cars equipped with an oxidation catalyst, and 1.00 for all other vehicles. If any manufacturer has reason to believe that the above methane content correction factors are not appropriate for its exhaust emission control system, the manufacturer may present evidence to the Executive Officer to support this claim. After examining the manufacturer's data, the Executive Officer may designate a methane content correction factor different from those stated above.

e. "Heavy-duty engine" means an engine which is used to propel a heavy-duty vehicle.

f. "Heavy-duty vehicle" means any motor vehicle having a manufacturer's gross vehicle weight rating greater than 6,000 pounds, except passenger cars.

g. "Light-duty truck" means any motor vehicle, rated at 6,000 pounds gross vehicle weight or less, which is designed primarily for purposes of transportation of property or is a derivative of such a vehicle, or is available with special features enabling off-street or off-highway operation and use.

h. "Medium-duty vehicle" means any heavy-duty vehicle having a manufacturer's gross vehicle weight rating of 8500 pounds or less.

3. Test Procedures

Subparagraphs 3 (e), (f), (g), and (h) below do not apply to 1980 model light-duty trucks and medium-duty vehicles.

a. In order to demonstrate compliance with a non-methane hydrocarbon emission standard, hydrocarbon emissions shall be measured in accordance with the "California Non-Methane Hydrocarbon Test Procedures."

In the alternative, a manufacturer may correct the total measured hydrocarbons with a methane content correction factor. This factor shall be 0.89 for gasoline-fueled passenger cars equipped with an oxidation catalyst, and 1.00 for all other vehicles. If any manufacturer has reason to believe that the above methane content correction factors are not appropriate for its exhaust emission control system, the manufacturer may present evidence to the Executive Officer to support this claim. After examining the manufacturer's data, the Executive Officer may designate a methane content correction factor different from those stated above.

b. Durability data submitted to subparagraph 86.078-24(f) may be from vehicles previously certified by EPA or ARB.

c. The requirements in subparagraph 86.078-28(a)(4)(i)(B) (durability vehicles must meet emission standards) refer, for each pollutant, to the highest of either the federal or California emission standards.

d. Notwithstanding changes in vehicle selection procedures, manufacturers may carry over data from 1979 model medium-duty vehicles to the 1980 model year.

e. In paragraph 86.079-21 (Application for certification), amend subparagraph (b)(5) to read:

(5) A statement of maintenance and procedures consistent with the restrictions imposed under subparagraph 86.078-25 (a)(1), necessary to assure that the vehicles (or engines) covered by a certificate of conformity in operation in normal use conform to the regulations, and a description of the program for training of personnel for such maintenance, and the equipment required.

f. In paragraph 86.078-25 (Maintenance):

1. Amend subparagraph (a)(1) to read as follows:

(1) Scheduled maintenance on the engine, emission control system and fuel system of durability vehicles shall, unless otherwise provided pursuant to subparagraph (a)(5)(iii), be restricted as set forth in the following provisions.

(i)(A) for gasoline-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment and/or service of the following items at intervals no more frequent than indicated:

(1) Drive belts on engine accessories (tension adjustment only); (30,000 miles).

(2) Valve lash (15,000 miles).

(3) Spark plugs (30,000 miles).

(4) Air filter (30,000 miles).

(5) Exhaust gas sensor (30,000 miles): Provided that an audible and/or visible signal approved by the Executive Officer alerts the vehicle operator to the need for sensor maintenance.

(6) Choke (cleaning or lubrication only); (30,000 miles).

(7) In addition, adjustment of the engine idle speed (curb idle and fast idle), valve lash, and engine bolt torque may be performed once during the first 5,000 miles of scheduled driving, provided the manufacturer makes a satisfactory showing that the maintenance will be performed on vehicles in use.

(B) for diesel-powered vehicles, maintenance shall be restricted to the following items at intervals no more frequent than every 12,500 miles of scheduled driving, provided that no maintenance may be performed after 45,000 miles of scheduled driving:

(1) Adjust low idle speed.

(2) Adjust valve lash if required.

(3) Adjust injector timing.

(4) Adjust governor.

(5) Clean and service injector tips.

(6) Adjust drive belt tension on engine accessories.

(7) Check engine bolt torque and tighten as required.

(ii) Change of engine and transmission oil, change or service of oil filter and, for diesel-powered vehicles only, change or service of fuel filter and air filter, will be allowed at the mileage intervals specified in the manufacturer's maintenance instructions.

(iii) Maintenance shall be conducted in a manner consistent with service instructions and specifications provided by the manufacturer for use by customer service personnel.

2. Delete subparagraph (a)(3) (Service of exhaust gas recirculation system).

3. Delete subparagraph (a)(4) (Service of catalytic converter).

(6) Choke (cleaning or lubrication only); (30,000 miles).

(7) In addition, adjustment of the engine idle speed (curb idle and fast idle), valve lash, and engine bolt torque may be performed once during the first 5,000 miles of scheduled driving, provided the manufacturer makes a satisfactory showing that the maintenance will be performed on vehicles in use.

(B) for diesel-powered vehicles, maintenance shall be restricted to the following items at intervals no more frequent than every 12,500 miles of scheduled driving, provided that no maintenance may be performed after 45,000 miles of scheduled driving:

(1) Adjust low idle speed.

(2) Adjust valve lash if required.

(3) Adjust injector timing.

(4) Adjust governor.

(5) Clean and service injector tips.

(6) Adjust drive belt tension on engine accessories.

(7) Check engine bolt torque and tighten as required.

(ii) Change of engine and transmission oil, change or service of oil filter and, for diesel-powered vehicles only, change or service of fuel filter and air filter, will be allowed at the mileage intervals specified in the manufacturer's maintenance instructions.

(iii) Maintenance shall be conducted in a manner consistent with service instructions and specifications provided by the manufacturer for use by customer service personnel.

2. Delete subparagraph (a)(3) (Service of exhaust gas recirculation system).

3. Delete subparagraph (a)(4) (Service of catalytic converter).

g. In paragraph 86.078-38 (Maintenance instructions):

1. Amend subparagraph (a) to read:

(a) The manufacturer shall furnish or cause to be furnished to the purchaser of each new motor vehicle (or motor vehicle engine) subject to the standards prescribed in paragraphs 86.078-8 through 86.078-11 as applicable, written instructions for the maintenance and use of the vehicle (or engine) by the purchaser as may be reasonable and necessary to assure the proper functioning of emission control systems in normal use. Such instructions shall be consistent with and not require maintenance in excess of the restrictions imposed under subparagraph 86.078-25(a)(1), except that the instructions may, subject to approval by the Administrator, require additional maintenance for vehicles operated under extreme conditions. In addition, subject to approval by the Administrator, the instructions may require inspections necessary to insure safe operation of the vehicle in use.

In addition to any maintenance which may be required pursuant to the preceeding paragraph, the instructions may also recommend such inspections, maintenance, and repair as may be reasonable and necessary for the proper functioning of the vehicle and its emission control systems. If the instructions recommend maintenance in addition to that which may be required pursuant to the preceeding paragraph, they shall distinguish clearly between required and recommended maintenance.

2. Amend subparagraph (c)(1) to read:

(1) Such instructions shall specify the performance of all scheduled maintenance performed by the manufacturer under subparagraph 86.078-25(a)(1).

If the instructions specify recommended maintenance as well as required maintenance, they shall distinguish clearly between the two.

3. Amend subparagraph (d) by adding a new subparagraph (3) to read:

(3) Such instructions shall specify the performance of all scheduled maintenance performed by the manufacturer under subparagraph 86.078-25(a)(1).

If the instructions specify recommended maintenance as well as required maintenance, they shall distinguish clearly between the two.

h. Amend subparagraph 86.078-39(a) (Submission of maintenance instructions) to read:

(a) The manufacturer shall provide to the Administrator, no later than the time of the submission required by paragraph 86.078-23, a copy of the maintenance instructions which the manufacturer proposes to supply to the ultimate purchaser in accordance with subparagraph 86.078-38(a). The Administrator will review such instructions to determine whether they are consistent with federal requirements, and to determine whether the instructions for required maintenance are consistent with the restrictions imposed under subparagraph 86.078-25(a)(1). The Administrator will notify the manufacturer of his determinations.

4. Standards

The following standards represent the maximum projected exhaust emissions for the useful life of the vehicle.

			Exhaust Emission Standards (gram per vehicle mile)		
Model Year	Vehicle Type (a)	Equivalent Inertia Weight (lbs.) (b)	Non-Methane Hydrocarbons(c)	Carbon Monoxide	Oxides of Nitrogen (NO_2)(d)
1980	PC	All	0.39 (0.41)	9.0	1.0
	PC(f)	All	0.39 (0.41)	9.0	1.5
	LDT	0-3999	0.39 (0.41)	9.0	1.5
	LDT (4WD)	0-3999	0.39 (0.41)	9.0	2.0
	LDT	4000-5999	0.50 (0.50)	9.0	2.0
	MDV	All	0.9 (0.9)	17	2.3

			100,000 Mile Exhaust Emission Standards (grams per vehicle mile)		
Model Year	Vehicle Type (a)	Equivalent Inertia Weight (lbs.) (b)	Non-Methane Hydrocarbons(c)(e)	Carbon Monoxide	Oxides of Nitrogen (NO_2)(d)
1980	PC(Option 1)	All	0.39 (0.41)	9.0	1.5
	PC(Option 2)	All	0.46	10.6	1.5

h. Amend subparagraph 86.078-39(a) (Submission of maintenance instructions) to read:

(a) The manufacturer shall provide to the Administrator, no later than the time of the submission required by paragraph 86.078-23, a copy of the maintenance instructions which the manufacturer proposes to supply to the ultimate purchaser in accordance with subparagraph 86.078-38(a). The Administrator will review such instructions to determine whether they are consistent with federal requirements, and to determine whether the instructions for required maintenance are consistent with the restrictions imposed under subparagraph 86.078-25(a)(1). The Administrator will notify the manufacturer of his determinations.

4. Standards

The following standards represent the maximum projected exhaust emissions for the useful life of the vehicle.

Model Year	Vehicle Type (a)	Equivalent Inertia Weight (lbs.) (b)	Exhaust Emission Standards (gram per vehicle mile) Non-Methane Hydrocarbons(c)	Carbon Monoxide	Oxides of Nitrogen (NO_2)(d)
1980	PC	All	0.39 (0.41)	9.0	1.0
	PC(f)	All	0.39 (0.41)	9.0	1.5
	LDT	0-3999	0.39 (0.41)	9.0	1.5
	LDT (4WD)	0-3999	0.39 (0.41)	9.0	2.0
	LDT	4000-5999	0.50 (0.50)	9.0	2.0
	MDV	All	0.9 (0.9)	17	2.3

Model Year	Vehicle Type (a)	Equivalent Inertia Weight (lbs.) (b)	100,000 Mile Exhaust Emission Standards (grams per vehicle mile) Non-Methane Hydrocarbons(c)(e)	Carbon Monoxide	Oxides of Nitrogen (NO_2)(d)
1980	PC(Option 1)	All	0.39 (0.41)	9.0	1.5
	PC(Option 2)	All	0.46	10.6	1.5

(a) "PC" means passenger cars.
"LDT" means light-duty trucks.
"LDT (4WD)" means light duty trucks equipped with four wheel drive.
"MDV" means medium-duty vehicles.

(b) Equivalent inertia weights are determined under subparagraph 86.129-79(a).

(c) Hydrocarbon standards in parentheses apply to total hydrocarbons, or, for 1980 models only, to emissions corrected by a methane content correction factor.

(d) In addition, for passenger cars, the maximum projected emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subpart B) shall be no greater than 1.33 times the applicable standard shown in the table. Both the projected emissions and the HWFET standard shall be rounded to the nearest 0.1 gm/mi before being compared.

(e) For vehicles from evaporative emissions families with projected 50,000 mile evaporative emissions values below 1.0 gm/test, an adjustment to the hydrocarbon exhaust emission standard may be granted by the Executive Officer. The adjusted standard will be calculated using the following formula:

$$HC_{ex} = .75\ (.185 - \frac{Di+3.3\ Hs}{29.4}) + HC_o$$

Where:

HC_{ex} = adjusted exhaust hydrocarbon standard
HC_o = unadjusted exhaust hydrocarbon standard
Di = diurnal evaporative emissions
Hs = hot soak evaporative emissions

(f) For vehicles certified to special standards authorized by Section 1960.2, Article 2, Subchapter 1, Chapter 3, Title 13, California Administrative Code.

5. Additional Requirements

Subparagraphs (5)(d) and (5)(e) below do not apply to 1980 model light-duty trucks and medium-duty vehicles.

a. A statement must be supplied that the production vehicles shall be in all material respects the same as those for which certification is granted.

b. If a gasoline-fueled vehicle manufacturer requires the use of unleaded fuel, a statement will be required that the engine and transmission combinations for which certification is requested are designed to operate satisfactorily on a gasoline having a research octane number not greater than 91.

c. Labeling required pursuant to paragraph 86.079-35 and Section 1965, Chapter 3, Title 13 of the California Administrative Code shall conform with the requirements specified in the "California Motor Vehicle Tune-Up Label Specifications."

d. For gasoline-powered vehicles evidence shall be supplied that the air/fuel metering system or secondary air injection system is capable of providing sufficient oxygen to theoretically allow enough oxidation to attain the CO emission standard at barometric pressures equivalent to those expected at altitudes ranging from sea level to 6,000 feet elevation.

e. The mechanism for adjusting the idle air/fuel mixture, if any, shall be designed so that either:

   (i) the mixture adjustment mechanism is not visible, even with the air cleaner removed, and special tools and/or procedures are required to make adjustments; or

   (ii) in the alternative, the Executive Officer may, upon reasonable notice to the manufacturer, require that a certification test of a vehicle be conducted with the idle air/fuel mixture at any setting which the Executive Officer finds corresponds to settings likely to be encountered in actual use. The Executive Officer, in making this finding, shall consider the difficulty of making adjustments, damage to the carburetor in the event of any effort to make an improper adjustement, and the need to replace parts following the adjustment.

a. A statement must be supplied that the production vehicles shall be in all material respects the same as those for which certification is granted.

b. If a gasoline-fueled vehicle manufacturer requires the use of unleaded fuel, a statement will be required that the engine and transmission combinations for which certification is requested are designed to operate satisfactorily on a gasoline having a research octane number not greater than 91.

c. Labeling required pursuant to paragraph 86.079-35 and Section 1965, Chapter 3, Title 13 of the California Administrative Code shall conform with the requirements specified in the "California Motor Vehicle Tune-Up Label Specifications."

d. For gasoline-powered vehicles evidence shall be supplied that the air/fuel metering system or secondary air injection system is capable of providing sufficient oxygen to theoretically allow enough oxidation to attain the CO emission standard at barometric pressures equivalent to those expected at altitudes ranging from sea level to 6,000 feet elevation.

e. The mechanism for adjusting the idle air/fuel mixture, if any, shall be designed so that either:

   (i) the mixture adjustment mechanism is not visible, even with the air cleaner removed, and special tools and/or procedures are required to make adjustments; or

   (ii) in the alternative, the Executive Officer may, upon reasonable notice to the manufacturer, require that a certification test of a vehicle be conducted with the idle air/fuel mixture at any setting which the Executive Officer finds corresponds to settings likely to be encountered in actual use. The Executive Officer, in making this finding, shall consider the difficulty of making adjustments, damage to the carburetor in the event of any effort to make an improper adjustement, and the need to replace parts following the adjustment.

The manufacturer shall submit for approval by the Executive Officer his or her proposed method for compliance with this requirement in his or her preliminary application for certification.

f. For passenger cars:

(i) The exhaust emissions shall be measured from all exhaust emission data vehicles tested in accordance with the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subpart B). The oxides of nitrogen emissions measured during such tests shall be multiplied by the oxides of nitrogen deterioration factor computed in accordance with paragraph 86.078-28, and then rounded and compared with the standard as set forth in paragraph 4 above. All data obtained pursuant to this paragraph shall be reported in accordance with procedures applicable to other exhaust emission data required pursuant to these procedures.

(ii) In the event that one or more of the manufacturer's emission data vehicles fail the HWFET standard listed in paragraph 4, the manufacturer may submit to the Executive Officer engineering data or other evidence showing that the system is capable of complying with the standard. If the Executive Officer finds, on the basis of an engineering evaluation, that the system can comply with the HWFET standard, he or she may accept the information supplied by the manufacturer in lieu of vehicle test data.

g. The manufacturer shall submit to the Executive Officer a statement that those vehicles for which certification is requested have driveability and performance characteristics which satisfy that manufacturer's customary driveability and performance requirements for vehicles sold in the United States. This statement shall be based on driveability data and other evidence showing compliance with the manufacturer's performance criteria. This statement shall be supplied with the manufacturer's final application for certification, and with all running changes for which emission testing is required.

If the Executive Officer has evidence to show that in-use vehicles demonstrate poor performance that could result in wide-spread tampering with the emission control systems, he or she may request all driveability data and other evidence used by the manufacturer to justify the performance statement.

6. Optional 100,000 Mile Certification Procedure

For 1980 model passenger cars, the alternate emission standards shown in paragraph (4) above shall apply to any engine family which meets all of the following additional requirements:

a. Each exhaust emission durability data vehicle shall be driven, with all emission control systems installed and operating, for 100,000 miles or such lesser distance as the Executive Officer may agree to as meeting the objectives of this procedure.

(i) The linear regression line for all pollutants shall be established by use of all required data from tests of the durability vehicle at every 5,000 mile interval from 5,000 to 100,000 miles. The requirements in subparagraph 86.078-28(a)(4)(i)(B)(durability vehicles must meet emissions standards) refer, for each pollutant, to the highest of either the federal 50,000 mile or California 100,000 mile emission standards.

(ii) Compliance with the hydrocarbon and carbon monoxide standards shall be determined as follows:

(a) For Option 1:

(A) the interpolated 4,000 and 50,000 mile points on the linear regression line in (i) shall not exceed the appropriate hydrocarbon and carbon monoxide standards, except as in (B) below.

(B) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.

(C) the hydrocarbon and carbon monoxide data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 50,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate hydrocarbon and carbon monoxide standards.

If the Executive Officer has evidence to show that in-use vehicles demonstrate poor performance that could result in wide-spread tampering with the emission control systems, he or she may request all driveability data and other evidence used by the manufacturer to justify the performance statement.

6. Optional 100,000 Mile Certification Procedure

For 1980 model passenger cars, the alternate emission standards shown in paragraph (4) above shall apply to any engine family which meets all of the following additional requirements:

a. Each exhaust emission durability data vehicle shall be driven, with all emission control systems installed and operating, for 100,000 miles or such lesser distance as the Executive Officer may agree to as meeting the objectives of this procedure.

(i) The linear regression line for all pollutants shall be established by use of all required data from tests of the durability vehicle at every 5,000 mile interval from 5,000 to 100,000 miles. The requirements in subparagraph 86.078-28(a)(4)(i)(B)(durability vehicles must meet emissions standards) refer, for each pollutant, to the highest of either the federal 50,000 mile or California 100,000 mile emission standards.

(ii) Compliance with the hydrocarbon and carbon monoxide standards shall be determined as follows:

(a) For Option 1:

(A) the interpolated 4,000 and 50,000 mile points on the linear regression line in (i) shall not exceed the appropriate hydrocarbon and carbon monoxide standards, except as in (B) below.

(B) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.

(C) the hydrocarbon and carbon monoxide data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 50,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate hydrocarbon and carbon monoxide standards.

(b) For Option 2:

(A) the interpolated 4,000 and 100,000 mile points on the linear regression line in (i) shall not exceed the appropriate hydrocarbon and carbon monoxide standards, except as in (B) below.

(B) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.

(C) the hydrocarbon and carbon monoxide data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 100,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate hydrocarbon and carbon monoxide standards.

(iii) Compliance with the oxides of nitrogen standard for Options 1 and 2 shall be determined as follows:

(a) the interpolated 4,000 and 100,000 mile points on the linear regression line in (i) shall not exceed the appropriate 100,000 mile oxides of nitrogen standard except as in (b) below.

(b) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.

(c) the oxides of nitrogen data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 100,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate 100,000 mile oxides of nitrogen standard.

All references in these test procedures except in subparagraph (ii)(a) to "useful life", 5 years, and 50,000 miles shall mean "total life", 10 years and 100,000 miles, respectively.

b. Only the following scheduled maintenance shall be allowed under subparagraph 86.078-25(a)(1)(i).

25(a)(1)(i)(A). Option 1. For gasoline or diesel-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment and/or service of the following items at intervals no more frequent than indicated:

(1) Drive belt tension on engine accessories (30,000 miles).

(2) Valve lash (15,000 miles).

(3) Spark plugs (30,000 miles).

(4) Air filter (30,000 miles).

(5) Exhaust gas sensor (30,000 miles); Provided that an audible and/or visible signal approved by the Executive Officer alerts the vehicle operator to the need for sensor maintenance.

(6) Choke cleaning or lubrication only (30,000 miles).

(7) Idle speed (30,000 miles).

(8) Fuel filter (30,000 miles).

(9) Injection timing adjustment (30,000 miles).

25(a)(1)(i)(B). Option 2. For gasoline or diesel-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment, and/or service of the following items at intervals no more frequent than indicated:

(1) Drive belt tension on engine accessories (30,000 miles).

(2) Valve lash (15,000 miles).

(3) Spark plugs (30,000 miles).

(4) Air filter (30,000 miles).

(5) Idle speed (30,000 miles).

(6) Fuel filter (30,000 miles).

(7) Injection timing adjustment (30,000 miles).

b. Only the following scheduled maintenance shall be allowed under subparagraph 86.078-25(a)(1)(i).

25(a)(1)(i)(A). Option 1. For gasoline or diesel-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment and/or service of the following items at intervals no more frequent than indicated:

(1) Drive belt tension on engine accessories (30,000 miles).

(2) Valve lash (15,000 miles).

(3) Spark plugs (30,000 miles).

(4) Air filter (30,000 miles).

(5) Exhaust gas sensor (30,000 miles); Provided that an audible and/or visible signal approved by the Executive Officer alerts the vehicle operator to the need for sensor maintenance.

(6) Choke cleaning or lubrication only (30,000 miles).

(7) Idle speed (30,000 miles).

(8) Fuel filter (30,000 miles).

(9) Injection timing adjustment (30,000 miles).

25(a)(1)(i)(B). Option 2. For gasoline or diesel-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment, and/or service of the following items at intervals no more frequent than indicated:

(1) Drive belt tension on engine accessories (30,000 miles).

(2) Valve lash (15,000 miles).

(3) Spark plugs (30,000 miles).

(4) Air filter (30,000 miles).

(5) Idle speed (30,000 miles).

(6) Fuel filter (30,000 miles).

(7) Injection timing adjustment (30,000 miles).

(iii) In addition, adjustment of the engine idle speed (curb idle and fast idle), valve lash, and engine bolt torque may be performed once during the first 5,000 miles of scheduled driving, provided the manufacturer makes a satisfactory showing that the maintenance will be performed on vehicles in use.

c. The manufacturer agrees to apply to vehicles certified under this paragraph the provisions of Section 43204 of the California Health and Safety Code for a period of ten years or 100,000 miles, whichever first occurs.

State of California
AIR RESOURCES BOARD

Note: These procedures are printed in a style to indicate the adopted changes. New text is underlined and deleted portions are noted.

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 1981 AND SUBSEQUENT MODEL PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES

Adopted: November 23, 1976
Adopted: December 14, 1976
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Amended: September 20, 1977
Amended: January 15, 1978
Amended: March 1, 1978
Amended: April 10, 1978
Amended: May 24, 1978
Amended: February 9, 1979
Amended: May 22, 1979
Amended: March 5, 1980

CALIFORNIA EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR 1981 AND SUBSEQUENT MODEL PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES

The provisions of Subparts A and B, Part 86, Title 40, Code of Federal Regulations, as they existed on April 15, 1978, are hereby adopted as the California Exhaust Emission Standards and Test Procedures for 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles, with the following exceptions and additions:

1. Applicability

   a. These test procedures are applicable to 1981 and subsequent model passenger cars, light-duty trucks and medium-duty vehicles, except motorcycles. References to "light-duty trucks" in 40 CFR 86 shall apply both to "light-duty trucks" and "medium-duty vehicles" in these procedures.

   b. Any reference to vehicle sales throughout the United States shall mean vehicle sales in California.

   c. Regulations concerning EPA hearings, EPA inspections, specific language on the Certificate of Conformity, evaporative emissions, high-altitude vehicles and testing, and heavy-duty engines and vehicles shall not be applicable to these procedures, except where specifically noted.

2. Definitions

   a. "Administrator" means the Executive Officer of the Air Resources Board.

   b. "Certificate of Conformity" means Executive Order certifying vehicles for sale in California.

   c. "Certification" means certification as defined in Section 39018 of the Health and Safety Code.

   d. "Passenger car" means any motor vehicle designed primarily for transportation of persons and having a capacity of twelve persons or less.

e. "Heavy-duty engine" means an engine which is used to propel a heavy-duty vehicle.

f. "Heavy-duty vehicle" means any motor vehicle having a manufacturer's gross vehicle weight rating greater than 6,000 pounds, except passenger cars.

g. "Light-duty truck" means any motor vehicle, rated at 6,000 pounds gross vehicle weight or less, which is designed primarily for purposes of transportation of property or is a derivative of such a vehicle, or is available with special features enabling off-street or off-highway operation and use.

h. "Medium-duty vehicle" means any heavy-duty vehicle having a manufacturer's gross vehicle weight rating of 8500 pounds or less.

3. Test Procedures

a. In order to demonstrate compliance with a non-methane hydrocarbon emission standard, hydrocarbon emissions shall be measured in accordance with the "California Non-Methane Hydrocarbon Test Procedures."

b. Durability data submitted pursuant to subparagraph 86.078-23(f) may be from vehicles previously certified by EPA or ARB.

c. The requirements in subparagraph 86.078-28(a)(4)(i)(B) (durability vehicles must meet emission standards) refer, for each pollutant, to the highest of either the federal or California emission standards.

d. In paragraph 86.079-21 (Application for certification), amend subparagraph (b)(5) to read:

(5) A statement of maintenance and procedures consistent with the restrictions imposed under subparagraph 86.078-25(a)(1), necessary to assure that the vehicles (or engines) covered by a certificate of conformity in operation in normal use conform to the regulations, and a description of the program for training of personnel for such maintenance, and the equipment required.

e. "Heavy-duty engine" means an engine which is used to propel a heavy-duty vehicle.

f. "Heavy-duty vehicle" means any motor vehicle having a manufacturer's gross vehicle weight rating greater than 6,000 pounds, except passenger cars.

g. "Light-duty truck" means any motor vehicle, rated at 6,000 pounds gross vehicle weight or less, which is designed primarily for purposes of transportation of property or is a derivative of such a vehicle, or is available with special features enabling off-street or off-highway operation and use.

h. "Medium-duty vehicle" means any heavy-duty vehicle having a manufacturer's gross vehicle weight rating of 8500 pounds or less.

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c. The requirements in subparagraph 86.078-28(a)(4)(i)(B) (durability vehicles must meet emission standards) refer, for each pollutant, to the highest of either the federal or California emission standards.

d. In paragraph 86.079-21 (Application for certification), amend subparagraph (b)(5) to read:

(5) A statement of maintenance and procedures consistent with the restrictions imposed under subparagraph 86.078-25(a)(1), necessary to assure that the vehicles (or engines) covered by a certificate of conformity in operation in normal use conform to the regulations, and a description of the program for training of personnel for such maintenance, and the equipment required.

e. In paragraph 86.078-25 (Maintenance):

1. Amend subparagraph (a)(1) to read as follows:

(1) Scheduled maintenance on the engine, emission control system and fuel system of durability vehicles shall, unless otherwise provided pursuant to paragraph (a)(5)(iii), be restricted as set forth in the following provisions.

(i)(A) for gasoline-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment and/or service of the following items at intervals no more frequent than indicated:

(1) Drive belts on engine accessories (tension adjustment only); (30,000 miles).

(2) Valve lash (15,000 miles).

(3) Spark plugs (30,000 miles).

(4) Air filter (30,000 miles).

(5) Exhaust gas sensor (30,000 miles): Provided that an audible and/or visible signal approved by the Executive Officer alerts the vehicle operator to the need for sensor maintenance at the mileage point.

(6) Choke (cleaning or lubrication only); (30,000 miles).

(7) In addition, adjustment of the engine idle speed (curb idle and fast idle), valve lash, and engine bolt torque may be performed once during the first 5,000 miles of scheduled driving, provided the manufacturer makes a satisfactory showing that the maintenance will be performed on vehicles in use.

(B) for diesel-powered vehicles, maintenance shall be restricted to the following items at intervals no more frequent than every 12,500 miles of scheduled driving, provided that no maintenance may be performed after 45,000 miles of scheduled driving:

(1) Adjust low idle speed.

(2) Adjust valve lash if required.

(3) Adjust injector timing.

(4) Adjust governor.

(5) Clean and service injector tips.

(6) Adjust drive belt tension on engine accessories.

(7) Check engine bolt torque and tighten as required.

(ii) Change of engine and transmission oil, change or service of oil filter and, for diesel-powered vehicles only, change or service of fuel filter and air filter, will be allowed at the mileage intervals specified in the manufacturer's maintenance instructions.

(iii) Maintenance shall be conducted in a manner consistent with service instructions and specifications provided by the manufacturer for use by customer service personnel.

(2) Delete subparagraph (a)(3) (Service of exhaust gas recirculation system).

(3) Delete subparagraph (a)(4) (Service of catalytic converter).

f. In paragraph 86.078-38 (Maintenance instructions):

1. Amend subparagraph (a) to read:

(B) for diesel-powered vehicles, maintenance shall be restricted to the following items at intervals no more frequent than every 12,500 miles of scheduled driving, provided that no maintenance may be performed after 45,000 miles of scheduled driving:

(1) Adjust low idle speed.

(2) Adjust valve lash if required.

(3) Adjust injector timing.

(4) Adjust governor.

(5) Clean and service injector tips.

(6) Adjust drive belt tension on engine accessories.

(7) Check engine bolt torque and tighten as required.

(ii) Change of engine and transmission oil, change or service of oil filter and, for diesel-powered vehicles only, change or service of fuel filter and air filter, will be allowed at the mileage intervals specified in the manufacturer's maintenance instructions.

(iii) Maintenance shall be conducted in a manner consistent with service instructions and specifications provided by the manufacturer for use by customer service personnel.

(2) Delete subparagraph (a)(3) (Service of exhaust gas recirculation system).

(3) Delete subparagraph (a)(4) (Service of catalytic converter).

f. In paragraph 86.078-38 (Maintenance instructions):

1. Amend subparagraph (a) to read:

(a) The manufacturer shall furnish or cause to be furnished to the purchaser of each new motor vehicle (or motor vehicle engine) subject to the standards prescribed in paragraphs 86.078-8 through 86.078-11 as applicable, written instructions for the maintenance and use of the vehicle (or engine) by the purchaser as may be reasonable and necessary to assure the proper functioning of emission control systems in normal use. Such instructions shall be consistent with and not require maintenance in excess of the restrictions imposed under subparagraph 86.078-25(a)(1), except that the instructions may, subject to approval by the Administrator, require additional maintenance for vehicles operated under extreme conditions. In addition, subject to approval by the Administrator, the instructions may require inspections necessary to insure safe operation of the vehicle in use.

In addition to any maintenance which may be required pursuant to the preceding paragraph, the instructions may also recommend such inspections, maintenance, and repair as may be reasonable and necessary for the proper functioning of the vehicle and its emission control systems. If the instructions recommend maintenance in addition to that which may be required pursuant to the preceding paragraph, they shall distinguish clearly between required and recommended maintenance.

2. Amend subparagraph (c)(1) to read:

   (1) Such instructions shall specify the performance of all scheduled maintenance performed by the manufacturer under subparagraph 86.078-25(a)(1).

   If the instructions specify recommended maintenance as well as required maintenance, they shall distinguish clearly between the two.

3. Amend subparagraph (d) by adding a new subparagraph (3) to read:

   (3) Such instructions shall specify the performance of all scheduled maintenance performed by the manufacturer under subparagraph 86.078-25(a)(1).

   If the instructions specify recommended maintenance as well as required maintenance, they shall distinguish clearly between the two.

g. Amend subparagraph 86.078-39(a) (Submission of maintenance instructions) to read:

(a) The manufacturer shall provide to the Administrator, no later than the time of the submission required by paragraph 86.078-23 a copy of the maintenance instructions which the manufacturer proposes to supply to the ultimate purchaser in accordance with subparagraph 86.078-38(a). The Administrator will review such instructions to determine whether they are consistent with federal requirements, and to determine whether the instructions for required maintenance are consistent with the restrictions imposed under subparagraph 86.078-25(a)(1). The Administrator will notify the manufacturer of his determinations.

4. Standards

The following standards represent the maximum projected exhaust emissions for the useful life of the vehicle.

Model Year	Vehicle Type (a)	Equivalent Inertia Weight (lbs.)(b)	Exhaust Emission Standards (grams per vehicle miles) Non-Methane Hydrocarbons(c)	Carbon Monoxide	Oxides of Nitrogen (NO_2)(e)
1981	PC	All	(0.41)	3.4	1.0
	PC(d)	All	0.39 (0.41)	7.0	0.7
	PC(g)	All	0.39 (0.41)	7.0	1.5
	LDT, MDV	0-3999	0.39 (0.41)	9.0	1.0
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.5
	MDV	6000&larger	0.60 (0.60)	9.0	2.0
1982	PC	All	0.39 (0.41)	7.0	0.4
	PC(d)	All	0.39 (0.41)	7.0	0.7
	LDT, MDV	0-3999	0.39 (0.41)	9.0	1.0
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.5
	MDV	6000&larger	0.60 (0.60)	9.0	2.0
1983 & Subsequent	PC	All	0.39 (0.41)	7.0	0.4
	LDT, MDV	0-3999	0.39 (0.41)	9.0	0.4
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.0
	MDV	6000&larger	0.60 (0.60)	9.0	1.5

g. Amend subparagraph 86.078-39(a) (Submission of maintenance instructions) to read:

(a) The manufacturer shall provide to the Administrator, no later than the time of the submission required by paragraph 86.078-23 a copy of the maintenance instructions which the manufacturer proposes to supply to the ultimate purchaser in accordance with subparagraph 86.078-38(a). The Administrator will review such instructions to determine whether they are consistent with federal requirements, and to determine whether the instructions for required maintenance are consistent with the restrictions imposed under subparagraph 86.078-25(a)(1). The Administrator will notify the manufacturer of his determinations.

4. Standards

The following standards represent the maximum projected exhaust emissions for the useful life of the vehicle.

Model Year	Vehicle Type (a)	Equivalent Inertia Weight (lbs.)(b)	Exhaust Emission Standards (grams per vehicle miles) Non-Methane Hydrocarbons(c)	Carbon Monoxide	Oxides of Nitrogen (NO_2)(e)
1981	PC	All	(0.41)	3.4	1.0
	PC(d)	All	0.39 (0.41)	7.0	0.7
	PC(g)	All	0.39 (0.41)	7.0	1.5
	LDT, MDV	0-3999	0.39 (0.41)	9.0	1.0
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.5
	MDV	6000&larger	0.60 (0.60)	9.0	2.0
1982	PC	All	0.39 (0.41)	7.0	0.4
	PC(d)	All	0.39 (0.41)	7.0	0.7
	LDT, MDV	0-3999	0.39 (0.41)	9.0	1.0
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.5
	MDV	6000&larger	0.60 (0.60)	9.0	2.0
1983 & Subsequent	PC	All	0.39 (0.41)	7.0	0.4
	LDT, MDV	0-3999	0.39 (0.41)	9.0	0.4
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.0
	MDV	6000&larger	0.60 (0.60)	9.0	1.5

Model Year	Vehicle Type (a)	Equivalent Inertia Weight (lbs.)(b)	100,000 Mile Exhaust Emission Standards (grams per vehicle mile) Non-Methane Hydrocarbons(c)(f)	Carbon Monoxide	Oxides of Nitrogen NO_2(e)
1981	PC(Option 1)	All	0.39	3.4	1.5
	PC(Option 2)	All	0.46	4.0	1.5
	LDT, MDV (Option 1)	0-3999	0.39 (0.41)	9.0	1.5
	LDT, MDV (Option 2)	0-3999	0.46	10.6	1.5
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	2.0
	MDV	6000+larger	0.60 (0.60)	9.0	2.3
1982	PC(Option 1)	All	(0.41)	7.0	1.0
	PC(Option 2)	All	0.46	8.3	1.0
	LDT, MDV (Option 1)	0-3999	0.39 (0.41)	9.0	1.5
	LDT, MDV (Option 2)	0-3999	0.46	10.6	1.5
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	2.0
	MDV	6000&larger	0.60 (0.60)	9.0	2.3
1983 & Subsequent	PC	All	0.39 (0.41)	7.0	1.0
	PC	All	0.46	8.3	1.0
	LDT, MDV (Option 1)	0-3999	0.39 (0.41)	9.0	1.0
	LDT, MDV (Option 2)	0-3999	0.46	10.6	1.0
	LDT, MDV	4000-5999	0.50 (0.50)	9.0	1.5
	MDV	6000&larger	0.60 (0.60)	9.0	2.0

(a) "PC" means passenger cars.
"LDT" means light-duty trucks.
"MDV" means medium-duty vehicles.

(b) Equivalent inertia weights are determined under subparagraph 86.129-79(a).

(c) Hydrocarbon standards in parentheses apply to total hydrocarbons.

(d) The second set of passenger car standards is optional. A manufacturer must select either the primary or optional sets of standards for its full product line for the entire two-year period.

(e) The maximum projected emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subparagraph B) shall be no greater than 1.33 times the applicable passenger car standards and 2.0 times the applicable light-duty truck and medium-duty vehicle standards shown in the table. Both the projected emissions and the HWFET standard shall be rounded to the nearest 0.1 gm/mi before being compared.

(f) For vehicles from evaporative emissions families with projected 50,000 mile evaporative emissions values below 1.0 gm/test, an adjustment to the hydrocarbon exhaust emission standard may be granted by the Executive Officer. The adjusted standard will be calculated using the following formula:

$$HC_{ex} = .75\ (.185 - \frac{Di+3.3\ Hs}{29.4}) + HC_o$$

Where:

HC_{ex} = adjusted exhaust hydrocarbon standard

HC_o = unadjusted exhaust hydrocarbon standard

Di = diurnal evaporative emissions
Hs = hot soak evaporative emissions.

(g) For vehicles certified to special standards authorized by Section 1960.2, Article 2, subchapter 1, Chapter 3, Title 13, California Administrative Code.

5. Additional Requirements

a. A statement must be supplied that the production vehicles shall be in all material respcts the same as those for which certification is granted.

b. If a gasoline-fueled vehicle manufacturer requires the use of unleaded fuel, a statement will be required that the engine and transmission combinations for which certification is requested are designed to operate satisfactorily on a gasoline having a research octane number not greater than 91.

c. Labeling required pursuant to paragraph 86.079-35 and Section 1965, Chapter 3, Title 13 of the California Administrative Code shall conform with the requirements specified in the "California Motor Vehicle Tune-Up Label Specifications."

(d) The second set of passenger car standards is optional. A manufacturer must select either the primary or optional sets of standards for its full product line for the entire two-year period.

(e) The maximum projected emissions of oxides of nitrogen measured on the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600, Subparagraph B) shall be no greater than 1.33 times the applicable passenger car standards and 2.0 times the applicable light-duty truck and medium-duty vehicle standards shown in the table. Both the projected emissions and the HWFET standard shall be rounded to the nearest 0.1 gm/mi before being compared.

(f) For vehicles from evaporative emissions families with projected 50,000 mile evaporative emissions values below 1.0 gm/test, an adjustment to the hydrocarbon exhaust emission standard may be granted by the Executive Officer. The adjusted standard will be calculated using the following formula:

$$HC_{ex} = .75\ (.185 - \frac{Di+3.3\ Hs}{29.4}) + HC_o$$

Where:

HC_{ex} = adjusted exhaust hydrocarbon standard

HC_o = unadjusted exhaust hydrocarbon standard

Di = diurnal evaporative emissions
Hs = hot soak evaporative emissions.

(g) For vehicles certified to special standards authorized by Section 1960.2, Article 2, subchapter 1, Chapter 3, Title 13, California Administrative Code.

5. Additional Requirements

a. A statement must be supplied that the production vehicles shall be in all material respcts the same as those for which certification is granted.

b. If a gasoline-fueled vehicle manufacturer requires the use of unleaded fuel, a statement will be required that the engine and transmission combinations for which certification is requested are designed to operate satisfactorily on a gasoline having a research octane number not greater than 91.

c. Labeling required pursuant to paragraph 86.079-35 and Section 1965, Chapter 3, Title 13 of the California Administrative Code shall conform with the requirements specified in the "California Motor Vehicle Tune-Up Label Specifications."

d. For gasoline-powered vehicles evidence shall be supplied that the air/fuel metering system or secondary air injection system is capable of providing sufficient oxygen to theoretically allow enough oxidation to attain the CO emission standard at barometric pressures equivalent to those expected at altidues ranging from sea level to 6,000 feet elevation.

e. The mechanism for adjusting the idle air/fuel mixture, if any, shall be designed so that either:

(i) The mixture adjustment mechanism is not visible, even with the air cleaner removed, and special tools and/or procedures are required to make adjustments; or

(ii) in the alternative, the Executive Officer may, upon reasonable notice to the manufacturer, require that a certification test of a vehicle be conducted with the idle air/fuel mixture at any setting which the Executive Officer finds corresponds to settings likely to be encountered in actual use. The Executive Officer, in making this finding, shall consider the difficulty of making adjustments, damage to the carburetor in the event of any effort to make an improper adjustment, and the need to replace parts following the adjustment.

The manufacturer shall submit for approval by the Executive Officer his or her proposed method for compliance with this requirement in his or her preliminary application for certification.

f. The exhaust emissions shall be measured from all exhaust emission data vehicles tested in accordance with the federal Highway Fuel Economy Test (HWFET; 40 CFR Part 600 Subpart B). The oxides of nitrogen emissions measured during such tests shall be multiplied by the oxides of nitrogen deterioration factor computed in accordance with paragraph 86.078-28, and then rounded and compared with the standard as set forth in paragraph 4 above. All data obtained pursuant to this paragraph shall be reported in accordance with procedures applicable to other exhaust emissions data required pursuant to these procedures.

In the event that one or more of the manufacturer's emission data vehicles fail the HWFET standard listed in paragraph 4, the manufacturer may submit to the Executive Officer engineering data or other evidence showing that the system is capable of complying with the standard. If the Executive Officer finds, on the basis of an engineering evaluation, that the system can comply with the HWFET standard, he or she may accept the information supplied by the manufacturer in lieu of vehicle test data.

g. The manufacturer shall submit to the Executive Officer a statement that those vehicles for which certification is requested have driveability and performance characteristics which satisfy that manufacturer's customary driveability and performance requirements for vehicles sold in the United States. This statement shall be based on driveability data and other evidence showing compliance with the manufacturer's performance criteria. This statement shall be supplied with the manufacturer's final application for certification, and with all running changes for which emission testing is required.

If the Executive Officer has evidence to show that in-use vehicles demonstrate poor performance that could result in wide-spread tampering with the emission control systems, he or she may request all driveability data and other evidence used by the manufacturer to justify the performance statement.

6. Optional 100,000 Mile Certification Procedure

The alternate emission standards shown in paragraph (4) above shall apply to any engine family which meets all of the following additional requirements:

a. Each exhaust emission durability data vehicle shall be driven, with all emission control systems installed and operating, for 100,000 miles or such lesser distance as the Executive Officer may agree to as meeting the objectives of this procedure. Compliance with the emission standards shall be established as follows:

(i) The linear regression line for all pollutants shall be established by use of all required data from tests of the durability vehicle at every 5,000 mile intervals from 5,000 to 100,000 miles. The requirements in subparagraph 86.078-28(a)(4)(i)(B)(durability vehicles must meet emissions standards) refer, for each pollutant, to the highest of either the federal 50,000 mile or California 100,000 mile emission standards.

In the event that one or more of the manufacturer's emission data vehicles fail the HWFET standard listed in paragraph 4, the manufacturer may submit to the Executive Officer engineering data or other evidence showing that the system is capable of complying with the standard. If the Executive Officer finds, on the basis of an engineering evaluation, that the system can comply with the HWFET standard, he or she may accept the information supplied by the manufacturer in lieu of vehicle test data.

g. The manufacturer shall submit to the Executive Officer a statement that those vehicles for which certification is requested have driveability and performance characteristics which satisfy that manufacturer's customary driveability and performance requirements for vehicles sold in the United States. This statement shall be based on driveability data and other evidence showing compliance with the manufacturer's performance criteria. This statement shall be supplied with the manufacturer's final application for certification, and with all running changes for which emission testing is required.

If the Executive Officer has evidence to show that in-use vehicles demonstrate poor performance that could result in wide-spread tampering with the emission control systems, he or she may request all driveability data and other evidence used by the manufacturer to justify the performance statement.

6. <u>Optional 100,000 Mile Certification Procedure</u>

The alternate emission standards shown in paragraph (4) above shall apply to any engine family which meets all of the following additional requirements:

a. Each exhaust emission durability data vehicle shall be driven, with all emission control systems installed and operating, for 100,000 miles or such lesser distance as the Executive Officer may agree to as meeting the objectives of this procedure. Compliance with the emission standards shall be established as follows:

(i) The linear regression line for all pollutants shall be established by use of all required data from tests of the durability vehicle at every 5,000 mile intervals from 5,000 to 100,000 miles. The requirements in subparagraph 86.078-28(a)(4)(i)(B)(durability vehicles must meet emissions standards) refer, for each pollutant, to the highest of either the federal 50,000 mile or California 100,000 mile emission standards.

25(a)(1)(i)(B) Option 2. For 1981 and later model gasoline or diesel-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment, and/or service of the following items at intervals no more frequent than indicated:

(1) Drive belt tension on engine accessories (30,000 miles).
(2) Valve lash (15,000 miles).
(3) Spark plugs (30,000 miles).
(4) Air filter (30,000 miles).
(5) Fuel filter (30,000 miles).
(6) Idle speed (30,000 miles).
(7) Injection timing (30,000 miles).

(iii) In addition, adjustment of the engine idle speed (curb idle and fast idle), valve lash, and engine bolt torque may be performed once during the first 5,000 miles of scheduled driving, provided the manufacturer makes a satisfactory showing that the maintenance will be performed on vehicles in use.

c. The manufacturer agrees to apply to vehicles certified under this paragraph the provisions of Section 43204 of the California Health and Safety Code for a period of ten year or 100,000 miles, whichever first occurs.

(ii) Compliance with the hydrocarbon and carbon monoxide standards shall be determined as follows:

(a) For Option 1:

(A) the interpolated 4,000 and 50,000 mile points on the linear regression line in (i) shall not exceed the appropriate hydrocarbon and carbon monoxide standards, except as in (B) below.

(B) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.

(C) the hydrocarbon and carbon monoxide data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 50,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate hydrocarbon and carbon monoxide standards.

(b) For Option 2:

(A) the interpolated 4,000 and 100,000 mile points on the linear regression line in (i) shall not exceed the appropriate hydrocarbon and carbon monoxide standards, except as in (B) below.

(B) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.

(C) the hydrocarbon and carbon monoxide data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 100,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate 100,000 mile hydrocarbon and carbon monoxide standards.

(iii) Compliance with the oxides of nitrogen standard for Options 1 and 2 shall be determined as follows:

(a) the interpolated 4,000 and 100,000 mile points on the linear regression line in (i) shall not exceed the appropriate 100,000 mile oxides of nitrogen standard except as in (b) below.

(b) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.

(c) the oxides of nitrogen data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 100,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate 100,000 mile oxides of nitrogen standard.

All references in these test procedures to "useful life," 5 years, and 50,000 miles shall mean "total life," 10 years, and 100,000 miles, respectively, except in subparagraph (ii).

b. Only the following scheduled maintenance shall be allowed under subpargraph 86.078.25(a)(1)(i).

25(a)(1)(i)(A) Option 1. For 1981 and later model gasoline or diesel-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment, and/or service of the following items at intervals no more frequent than indicated.

(1) Drive belt tension on engine accessories (30,000 miles).
(2) Valve lash (15,000 miles).
(3) Spark plugs (30,000 miles).
(4) Air filter (30,000 miles).
(5) Exhaust gas sensor (30,000 miles); Provided that an audible and/or visible signal approved by the Executive Officer alerts the vehicle operator to the need for sensor maintenance.
(6) Choke, cleaning or lubrication only (30,000 miles).
(7) Idle speed (30,000 miles).
(8) Fuel Filter (30,000 miles).
(9) Injection timing (30,000 miles).

(iii) Compliance with the oxides of nitrogen standard for Options 1 and 2 shall be determined as follows:

(a) the interpolated 4,000 and 100,000 mile points on the linear regression line in (i) shall not exceed the appropriate 100,000 mile oxides of nitrogen standard except as in (b) below.

(b) the linear regression line in (i) may exceed the standard provided that no data point exceeds the standard.

(c) the oxides of nitrogen data from the 4,000 mile test point of the emission data vehicle shall be multiplied by the deterioration factor computed by dividing the interpolated 100,000 mile point by the interpolated 4,000 mile point. These values shall not exceed the appropriate 100,000 mile oxides of nitrogen standard.

All references in these test procedures to "useful life," 5 years, and 50,000 miles shall mean "total life," 10 years, and 100,000 miles, respectively, except in subparagraph (ii).

b. Only the following scheduled maintenance shall be allowed under subpargraph 86.078.25(a)(1)(i).

25(a)(1)(i)(A) Option 1. For 1981 and later model gasoline or diesel-fueled vehicles, maintenance shall be restricted to the inspection, replacement, cleaning, adjustment, and/or service of the following items at intervals no more frequent than indicated.

(1) Drive belt tension on engine accessories (30,000 miles).
(2) Valve lash (15,000 miles).
(3) Spark plugs (30,000 miles).
(4) Air filter (30,000 miles).
(5) Exhaust gas sensor (30,000 miles); Provided that an audible and/or visible signal approved by the Executive Officer alerts the vehicle operator to the need for sensor maintenance.
(6) Choke, cleaning or lubrication only (30,000 miles).
(7) Idle speed (30,000 miles).
(8) Fuel Filter (30,000 miles).
(9) Injection timing (30,000 miles).

State of California
AIR RESOURCES BOARD

Response to Significant Environmental Issues

ITEM: Confirmation of Emergency Adoption of Amendments to Title 13, California Administrative Code, regarding Exhaust Emissions Standards for 1980 and 1981 Passenger Cars and to Consider Conforming Amendments to Assembly Line Test Procedures.

Public Hearing Date: March 5, 1980

Response Date: March 5, 1980

Issuing Authority: Air Resources Board

Comments: NONE

Response: N/A

Certified: Sally Rump
Board Secretary

Date: April 28, 1980

State of California

Memorandum

To : Huey D. Johnson
Secretary
Resources Agency

Date : April 30, 1980

Subject : Filing of Notice of Decision of the Air Resources Board

From : Air Resources Board

Pursuant to Title 17, Section 60007(b), and in compliance with Air Resources Board certification under section 21080.5 of the Public Resources Code, the Air Resources Board hereby forwards for posting the attached notice of decision and response to environmental comments raised during the comment period.

Sally Rump
Board Secretary

attachments
[redacted]