ADOPTED

State of California
AIR RESOURCES BOARD

Resolution 79-84

December 19, 1979

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;

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;

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 1, Subchapter 2, Chapter 3, Title 13, California Administrative Code, by adding a new Section 2059, which reads:

2059. Assembly-Line Test Procedures - 1981 Model Year.
New 1981 model year passenger cars, light-duty trucks, and medium-duty vehicles subject to certification and manufactured for sale in California shall be tested in accordance with the "California Assembly-Line Test Procedures for 1981 Model Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," adopted December 19, 1979.

BE IT FURTHER RESOLVED, that the Board hereby adopts the "California Assembly-Line Test Procedures for 1981 Model Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," dated December 19, 1979.

BE IT FURTHER RESOLVED, that the Board hereby finds that its regulations in Section 2059, Title 13, California Administrative Code, the assembly-line test procedures referenced therein, and the related inspection and compliance test procedures in Article 2, Subchapter 2, Chapter 3, Title 13, California Administrative Code, are individually for each vehicle category, and, in the aggregrate, 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 79-84, as passed by the Air Resources Board.

Sally Rump

Board Secretary

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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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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(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.

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(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.

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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 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) From a representative sample of vehicles approved by the Executive Officer, the number and percentage of vehicles:

(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

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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.~~

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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.

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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

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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.

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.

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

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State of California

Memorandum

To : Huey D. Johnson
Secretary
RESOURCES AGENCY

Date : March 24, 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

Sally Rump
BOARD SECRETARY

attachments
Resolution 79-84