State of California
AIR RESOURCES BOARD

Resolution No. 76-7

February 20, 1976

WHEREAS, Sections 39601 and 43210 of the Health and Safety Code authorize the Air Resources Board by regulation to adopt test procedures applicable to motor vehicles manufactured for sale in this state;

WHEREAS, the present assembly-line or predelivery test procedures for 1976 and subsequent model year gasoline powered passenger cars and light duty trucks contain quality audit test provisions, reporting procedures and window decal requirements that are not appropriate for 1977 model year vehicles; and

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

NOW, THEREFORE, BE IT RESOLVED, that Section 2055 of Article 1, Subchapter 2, Chapter 3, Title 13, California Administrative Code, be adopted as follows:

2055. Assembly-Line or Pre-Delivery Test Procedure -- 1977 and Subsequent Model-Year Gasoline-Powered Passenger Cars and Light-Duty Trucks

New 1977 and subsequent model-year gasoline-powered passenger cars and light-duty trucks shall be assembly-line tested in compliance with the Air Resources Board's "California Assembly-Line Test Procedures for 1977 and Subsequent Model-Year Gasoline-Powered Passenger Cars and Light-Duty Trucks", adopted February 20, 1976.

BE IT FURTHER RESOLVED, that the "California Assembly-Line Test Procedures for 1977 and Subsequent Model-Year Gasoline-Powered Passenger Cars and Light-Duty Trucks", dated February 20, 1976, are hereby adopted;

BE IT FURTHER RESOLVED, that Section 2054 of Title 13, which presently applies to 1976 and subsequent model years, together with the test procedures incorporated therein, is amended to limit its application to the 1976 model year, only, as shown in Appendix III of staff report No. 76-4-3, dated February 20, 1976, titled "Public Hearing - Amendments to the Assembly-Line Test Procedure Regulations for 1977 and Subsequent Model Year Passenger Cars and Light Duty Trucks".

BE IT FURTHER RESOLVED, that Sections 2106, 2107, and 2108 of Title 13 are amended and Section 2110 of Title 13 is adopted as shown in Appendix II of staff report No. 76-4-3, dated February 20, 1976, titled "Public Hearing - Amendments to the Assembly-Line Test Procedure Regulations for 1977 and Subsequent Model Year Passenger Cars and Light Duty Trucks".

State of California

AIR RESOURCES BOARD

California Assembly-Line Test Procedures for 1977 ~~and Subsequent~~ Model-Year Gasoline-Powered Passenger Cars and Light-Duty Trucks

Adopted February 20, 1976

A. General Provisions

These test procedures, adopted pursuant to Section ~~39052~~ 43210 of the California Health and Safety Code, specify the exhaust emissions quality control and audit testing and reporting requirements for manufacturers of gasoline-powered passenger cars and light-duty trucks to be sold and registered in the State of California. These procedures ~~adopted December 11, 1974~~ shall become effective with the start of production of the ~~1976~~ 1977 model-year vehicles.

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 Official Exhaust Emission Test Procedures for the model year in production. A vehicle is in compliance with the assembly-line standards and test procedures when that vehicle is in compliance with the short 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 short inspection tests, a vehicle which passes the short 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. The vehicle engine shall be adjusted to the manufacturer's specifications for delivery to customer prior to emissions testing. A steady state inspection test must be performed on all vehicles. The distribution of the total quarterly production for each family or subfamily by type test is:

Quality Audit	Inspection Test	
Official Approval Test	Steady State	Functional
At least 2.0%	All vehicles	All vehicles

A vehicle which fails any assembly-line inspection test may be retested or repaired and if on retest it passes each test by which it was rejected, it may be sold without penalty.

For vehicles manufactured during the first calendar quarter of model production and not to exceed 30 calendar days thereafter, the exhaust emissions shown on a window decal shall be the highest values from the engine family emission data fleet. Not more than one month after the first and each succeeding calendar quarter of production, the exhaust emissions shown on a window decal shall be the average quality audit values for the engine family of 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). Each vehicle emission decal shall have the following statement displayed thereon:

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

Additionally, the hydrocarbon (HC) and carbon monoxide (CO) concentrations determined by the steady state inspection test for each vehicle shall be displayed on a window decal along with the applicable control limits for that

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

Additionally, the hydrocarbon (HC) and carbon monoxide (CO) concentrations determined by the steady state inspection test for each vehicle shall be displayed on a window decal along with the applicable control limits for that

vehicle's-engine family or subfamily. For those vehicles tested to establish temporary control limit values, the applicable control limits shall be the steady state emission values determined for those vehicles.

Air Resources Board personnel and mobile laboratories shall have access to vehicle assembly plants, ~~or~~ distribution facilities and test facilities for the purpose of vehicle selection, testing and observation.

The frequency of access shall be proportional among manufacturers in relation to California vehicle sales, as far as practical. Scheduling of access shall be arranged with the designated manufacturer's representative ~~plant, facility manager, or dealership~~ and shall not unreasonably disturb normal operations.

Variations from these procedures which produce substantially equivalent results may be authorized by the Executive Officer. In extraordinary circumstances where compliance with these procedures cannot be fulfilled, a manufacturer may appeal to the Air Resources Board for a temporary exception.

B. Assembly-Line Inspection Test Procedures

1. Applicability

These test procedures are applicable to all manufacturers of gasoline-powered passenger cars and light-duty trucks having an engine displacement greater than 50 cubic inches.

The Executive Officer may approve determination of control limits by subfamilies, e.g., different carburetors, assembly-plants, engine displacement, control systems, transmissions, and inertia weights.

2. Emission Standards

Any vehicle tested by the steady state inspection test showing emissions less than the control limit established for its engine family or subfamily and which passes its appropriate functional tests will be considered ~~as meeting the emission standards~~ to be in compliance with the short inspection test requirements. The control limit for each engine family or subfamily 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 subfamily tested by the steady state assembly-line inspection test.

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

(c) Determine the sum of the mean plus two times the standard deviation.

(d) The values found in Step (c) will be the emission level of the control limit.

(e) 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.

(f) 1. For control systems that do not use catalytic converters or for control systems that use catalytic converters without air injection - If the HC control limit value

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

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

(c) Determine the sum of the mean plus two times the standard deviation.

(d) The values found in Step (c) will be the emission level of the control limit.

(e) 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.

(f) 1. For control systems that do not use catalytic converters or for control systems that use catalytic converters without air injection - If the HC control limit value

determined in Step (c) for the steady state idle inspection test is less than 150 ppm, the HC control limit value may be increased by up to 50 ppm but may not exceed 150 ppm. If the Step (c) control limit for CO is less than 1.0 percent, the CO control limit may be increased by up to 0.5 percent but may not exceed 1.0 percent.

2. For control systems that use catalytic converters with air injection - If the HC control limit value determined in Step (c) for the steady state idle inspection test is less than 75 ppm, the control limit value may be increased by up to 30 ppm, but may not exceed 75 ppm. If the Step (c) control limit for CO is less than 0.5 percent the CO control limit may be increased by up to 0.3 percent but may not exceed 0.5 percent.

(g) Idle control limit values may be rounded to the nearest 10 ppm HC and 0.1 percent CO in conformance to ASTM Designation: E29 67.

(h) The maximum allowable steady state control limits for HC and CO are those values used as the idle mode standards shown in Section 2176 of Title 13 of the California Administrative Code ~~"Idle-Emission-Standards-for-California-Highway-Light-Duty-Vehicle Inspection~~" for the vehicle model year.

Control limit values shall be redetermined for each succeeding quarter based on the measured emissions from at least 100 vehicles produced during the last half of the preceding quarterly production of each engine family or subfamily tested by the steady state inspection 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 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 redetermined following running changes which affect idle emissions levels. The new control limit values and the month they first went into effect shall be part of the notification.

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

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

3. Inspection Test Procedures

(a) Functional Tests

In addition to meeting the requirements of Section 2 (Emission Standards) of the Assembly-Line Inspection Test Procedures, functional tests of the engine components and control systems which affect emissions shall be made prior to the inspection test. 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 must be submitted to the Executive Officer prior to the start of a model production year. Within 60 days of its receipt the Executive Officer may require revisions to the proposal.

(b) Steady State Inspection Test

The steady state inspection test shall consist of a determination of HC and CO with the engine operating in a normal idle condition. All tests, including control limit test vehicles, shall be conducted as follows:

(1) Vehicles shall be tested in the normal "warmed-up" operating temperature range. This condition is considered to be between when the choke is fully open with the engine running at curb idle speed and before the water temperature gets so high that thermal override devices are actuated to prevent overheating.

The test vehicles should be warmed-up as similarly as possible to those used to determine its control limits.

(2) The vehicle shall be in park, neutral, or drive gear and all accessories turned off and shall be consistent with the techniques used to establish the control limits.

(3) 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.

4. Reports

Reports shall be submitted to the Air Resources Board within 30 calendar days of the end of each calendar quarter and within 60 calendar days of the end of the manufacturer's model production year. Results for two different model years shall not be combined statistically.

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The test vehicles should be warmed-up as similarly as possible to those used to determine its control limits.

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4. Reports

Reports shall be submitted to the Air Resources Board within 30 calendar days of the end of each calendar quarter and within 60 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) For steady state tests, the mean and the standard deviation of those tests required to determine control limits.

(b) Temporary quarterly control limit values obtained for first quarter of production.

(c) Steady state control limit values for the next quarter's production.

(d) HC values stated as hexane equivalents (NDIR).

C. Quality Audit Test Procedures

The manufacturer may elect either of the following two optional procedures for each engine family. The manufacturer shall notify the Executive Officer of the selection made after the first 30 quality audit vehicles have been tested for an engine family. The selected option shall remain in effect for the production of the model year including the first 30 tested vehicles.

OPTION 1

1. Applicability

This procedure is applicable, beginning with the ~~1976~~ 1977 model-year, to all manufacturers of gasoline-powered passenger cars and light-duty trucks having an engine displacement greater than 50 cubic inches.

2. Standards and Test Procedures

The emission standards and the sampling and analytical procedure shall be that described in the Official California Exhaust Emission Test Procedures for the model year in production, with the specific exceptions stated as follows:

(a) The evaporative emission control system may be isolated during the test by disconnection or use of a slave canister.

(b) The vehicle shall be tested as received from the inspection test operations, 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 reasonably adhered to for all quality audit testing within an engine family or subfamily basis or engine family or subfamily/assembly plant basis. After the inspection test operations no emissions tests may be performed prior to the first quality audit test. If the vehicle is shipped to a remote facility for quality audit testing normal dealer pre-delivery inspection may be performed. If the manufacturer elects the retest provision of Paragraph C.2.(c)(2), additional mileage accumulation between quality audit tests will be allowed provided there are no additional emissions tests.

(c) The manufacturer has the option of either of the following:

(1) The initial quality audit test shall comprise the official data for that vehicle, or

(2) The manufacturer may retest without repair or adjustment any vehicle that exceeds the standard for a given compound, provided he also retests without repair or adjustment all vehicles with initial quality audit test emission values that are 90 to 100% of standard for the same compound. The emission values determined for all compounds by the second test shall be the official data for these retested vehicles. The manufacturer may elect to implement this option on either an engine family (or subfamily) basis or engine family (or subfamily)/assembly plant basis. If option (c) (2) is elected at any time, the retest schedule must be adhered to for a minimum of 30 calendar days.

(b) The vehicle shall be tested as received from the inspection test operations, 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 reasonably adhered to for all quality audit testing within an engine family or subfamily basis or engine family or subfamily/assembly plant basis. After the inspection test operations no emissions tests may be performed prior to the first quality audit test. If the vehicle is shipped to a remote facility for quality audit testing normal dealer pre-delivery inspection may be performed. If the manufacturer elects the retest provision of Paragraph C.2.(c)(2), additional mileage accumulation between quality audit tests will be allowed provided there are no additional emissions tests.

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3. ~~(3)~~ Vehicle Sample Selection

~~The number of vehicles in the sample shall be not less than two percent (2.0%) of the calendar quarterly production of each engine family.~~ For each engine family: 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 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 that is not meeting 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 C.5. The sample rate so chosen shall not be less than 2.0%. ~~For these manufacturers who do not sell more than 100 motor vehicles a year in California, the number of vehicles in the sample shall be not less than two percent (2.0%) of the model year production of each engine family.~~ The Executive Officer may upon notice to the manufacturer require the sample rate to be increased to up to ten percent (not to exceed 30 additional vehicles) of the calendar quarterly production of any engine family by invoking Section 2110 of Title 13 of the California Administrative Code.

~~They~~ The test vehicles shall be equipped with exhaust controls as for California and shall be representative of 100 percent of each manufacturer's total California sales. Vehicles shall be selected as randomly as practicable for each engine family. Selection procedures shall be submitted to the Executive Officer prior to use. All vehicles shall have completed the steady state inspection test-repair cycle.

4. Reports

Reports shall be submitted to the Air Resources Board within 30 calendar days of the end of each calendar quarter and within 60 calendar days of the end of the manufacturer's model production year. In addition, a shorter reporting period may be required at the option of the Executive Officer by invoking Section 2109 or 2110 of Title 13 of the California Administrative Code. Any engine family whose first 30 tested vehicles of any calendar quarter of production with a failure rate in excess of that described in paragraph C.5. (Evaluation) shall be reported as soon as practicable within 10 working days. Additionally, the manufacturer shall evaluate the test results of each engine family at the end of each month. If the sample size is 30 or more vehicles the Executive Officer shall be notified as soon as practicable within 10 working days if there is a failure rate in excess of that described in paragraph C.5. (Evaluation)

Quarterly reports shall include:

(a) Total production and test sample size for each engine family.

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Quarterly reports shall include:

(a) Total production and test sample size for each engine family.

(b) Sample description for each engine family, including vehicle make, engine size, vehicle identification number, carburetion and transmission system.

(c) Emission data for each vehicle tested corrected for methane as allowed in the California Exhaust Emission Standards and Test Procedures. Vehicles exceeding the standards may be repaired but the results of the original emission tests shall be reported. If a manufacturer retests any vehicle of an engine family without repair or adjustment the results of the first two tests shall be reported. In reporting the data and comparing to the standards, the rounding-off method used shall conform to ASTM E29 67.

(d) Statistical analysis of the quality audit test results for each engine family stating:

(1) Number of vehicles initially tested.

(2) Average emission and standard deviation of total sample.

(3) Number of vehicles exceeding:

(a) hydrocarbon standard

(b) carbon monoxide standard

(c) oxides of nitrogen standard

(e) Statistical analysis as enumerated in paragraph C.4. (d) (2) and C.4. (d) (3) using the exhaust emission test results as determined in paragraph C.4.(c) for each quality audit vehicle multiplied by the appropriate approval deterioration factor. These data shall be submitted for information only.

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

If the manufacturer elects the retest option of paragraph C.2.(c) (2) the dates of each test and retest must be reported. If this retest option is implemented on a subfamily or engine family or subfamily/ assembly plant basis the individual test data must be so identified by subfamily and/or assembly plant.

5. Evaluation

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 typical of production.

If more than 10% of the quality audit sample of an engine family for a full or combined calendar quarter of production exceeds the certification ~~approval~~ standard for a given compound, the Board will consider probable cause exists for finding violation of Section 43106 ~~39155~~ of the California Health and Safety Code for that family. Section 2109 of Title 13 of the California Administrative Code may be invoked. In order to evaluate test data as to pass/fail rate for short start-up production periods (less than a full calendar quarter) test data will be added to and then evaluated with full production quarters.

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

If the manufacturer elects the retest option of paragraph C.2.(c) (2) the dates of each test and retest must be reported. If this retest option is implemented on a subfamily or engine family or subfamily/ assembly plant basis the individual test data must be so identified by subfamily and/or assembly plant.

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For a given engine family, if more than 10% of the first 30 vehicles quality audit tested, or of the monthly evaluation of 30 or more vehicles quality audit tested, or of the total vehicles quality audit tested in a short start-up production period exceed the certification standard for a given compound Section 2110 of Title 13 of the California Administrative Code may be invoked.

This evaluation does not apply to sample sizes less than thirty (30) vehicles. If a sample size for a particular production quarter is less than 30 vehicles, the data will be accumulated on a quarter to quarter basis until at least 30 vehicles have been quality audit tested. That engine family will then be evaluated according to this section. If the last quarter's production has less than 30 tested vehicles, it will be evaluated with the previous quarters of production until there is a sample size of at least 30 tested vehicles.

In addition, if the Executive Officer has required a larger sample rate and/or shorter reporting period by invoking Section 2109 or 2110 an evaluation will be made of 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 is at least 30 vehicles.

~~In order to evaluate test data as to pass/fail rate short production periods (less than a full calendar quarter) will be added to and then evaluated with full production quarters. Therefore, if the start of production is a short production quarter, the test data will be accumulated and evaluated together with the next calendar quarter's test data. If the buildout period is a short production quarter, the test data will be accumulated and evaluated together with the previous calendar quarter's test data. The sample size requirement of paragraph 6.3. applies to any short production quarter. However, quarterly reports are required for each calendar quarter of production including those that are short production periods.~~

~~If a manufacturer produces vehicles during two calendar quarters only both short production periods, then evaluation will be made once at the end of total production.~~

California Statutes and Regulations

Health and Safety Code

"Section ~~39155~~ 43106. Each new motor vehicle or engine required pursuant to this part to meet the emission standards established pursuant to Section 43101 ~~in Article 2 (commencing with Section 39100) of this~~ chapter shall be, in all material respects, substantially the same in construction as the test motor vehicle or engine, as the case may be, ~~and transmission combination~~ which has been certified approved by the state board Board in accordance with Section ~~39151;~~ 43104. However, ~~provided that~~ changes with respect to new motor vehicles or engines previously certified approved may be made if such changes do not increase emissions above the these standards under which those motor vehicles or engines, as the case may be, ~~for which approval was granted and provided~~

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~~that-such-changes~~ were certified and are made in accordance with procedures specified by the state board." ~~Board-pursuant-to-subdivision (k)-of-Section-39052."--Also-enforcement-proceedures-may-be-instituted under-Section-2100-2109-of-Title-13-of-the-California-Administrative-Code.~~

Title 13, Administrative Code

Applicable Sections of Article 2, Subchapter 2, Chapter 3 of the California Administrative Code.

C. Quality Audit Test Procedures

OPTION 2

1. Applicability

This procedure is applicable, beginning with the 1977 model year, to all manufacturers of gasoline-powered passenger cars and light-duty trucks having an engine displacement greater than 50 cubic inches.

2. Standards and Test Procedures

The emission standards shall be the California exhaust emission standards for the model year in production.

The sampling and analytical procedure shall be that described in the California Exhaust Emission Standards and Test Procedures for the model year in production, with the specific exceptions stated as follows:

(a) The evaporative emission control system may be isolated during the test by disconnection or use of a slave canister.

(b) The vehicle shall be tested as received from the inspection test operations, 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 reasonably adhered to for all quality audit testing within an engine family or subfamily

basis or engine family or subfamily/assembly plant basis. After the inspection test operations no emissions tests may be performed prior to the first quality audit test. If the vehicle is shipped to a remote facility for quality audit testing normal dealer pre-delivery inspection may be performed.

(c) The initial quality audit test shall comprise the official data for that vehicle

3. Vehicle Sample Selection

For each engine family: 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 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 that is not meeting 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 C.5. The sample rate so chosen shall not be less than 2.0%. The Executive Officer may upon notice to the manufacturer require the sample rate to be increased to up to ten percent (not to exceed 30 additional vehicles) of the calendar quarterly production of any engine family by invoking Section 2110 of Title 13 of the California Administrative Code.

The test vehicles shall be equipped with exhaust controls as for California and shall be representative of 100 percent of each manufacturer's total California sales. Vehicles shall be selected as randomly as practicable for each engine family. Selection procedures shall be submitted to the Executive Officer prior to use. All vehicles shall have completed the steady state inspection test-repair cycle.

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3. Vehicle Sample Selection

For each engine family: 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 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 that is not meeting 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 C.5. The sample rate so chosen shall not be less than 2.0%. The Executive Officer may upon notice to the manufacturer require the sample rate to be increased to up to ten percent (not to exceed 30 additional vehicles) of the calendar quarterly production of any engine family by invoking Section 2110 of Title 13 of the California Administrative Code.

The test vehicles shall be equipped with exhaust controls as for California and shall be representative of 100 percent of each manufacturer's total California sales. Vehicles shall be selected as randomly as practicable for each engine family. Selection procedures shall be submitted to the Executive Officer prior to use. All vehicles shall have completed the steady state inspection test-repair cycle.

4. Reports

Reports shall be submitted to the Air Resources Board within 30 calendar days of the end of each calendar quarter and within 60 calendar days of the end of the manufacturer's model production year. In addition, a shorter reporting period may be required at the option of the Executive Officer by invoking Section 2109 or 2110 of Title 13 of the California Administrative Code. Any engine family whose first 30 tested vehicles of any calendar quarter of production with a failure rate in excess of that described in paragraph C.5. (Evaluation) shall be reported as soon as practicable within 10 working days. Additionally, the manufacturer shall evaluate the test results of each engine family at the end of each month. If the sample size is 30 or more vehicles the Executive Officer shall be notified as soon as practicable within 10 working days if there is a failure rate in excess of that described in paragraph C.5. (Evaluation).

Quarterly report shall include:

(a) Total production and test sample size for each engine family.

(b) Sample description for each engine family, include vehicle make, engine, size, vehicle identification number, carburetion and transmission system.

(c) Emission data for each vehicle tested corrected for methane as allowed in the California Exhaust Emission Standards and Test Procedures. Vehicles exceeding the standards may be repaired but the results of the original emission tests shall be reported. In reporting the data the rounding-off method used shall confrom to ASTM E29 67.

(d) Statistical analysis of the quality audit test results for each engine family stating:

(1) Number of vehicles initially tested.

(2) Average emissions multiplied by the appropriate certification deterioration factor and the standard deviations of total sample based on emission data for each vehicle tested. The methane correction, as allowed in the California Exhaust Emission Standards and Test Procedures, shall be applied to emission data for each vehicle prior to calculation of the average emissions and standard deviations.

(3) After adjustment for methane and deterioration factor, the number of vehicles exceeding:

(a) hydrocarbon standard

(b) carbon monoxide standard

(c) oxides of nitrogen standard

(4) After adjustment for methane, the number of vehicles exceeding:

(a) hydrocarbon standard

(b) carbon monoxide standard

(c) oxides of nitrogen standard

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

(d) Statistical analysis of the quality audit test results for each engine family stating:

(1) Number of vehicles initially tested.

(2) Average emissions multiplied by the appropriate certification deterioration factor and the standard deviations of total sample based on emission data for each vehicle tested. The methane correction, as allowed in the California Exhaust Emission Standards and Test Procedures, shall be applied to emission data for each vehicle prior to calculation of the average emissions and standard deviations.

(3) After adjustment for methane and deterioration factor, the number of vehicles exceeding:

(a) hydrocarbon standard

(b) carbon monoxide standard

(c) oxides of nitrogen standard

(4) After adjustment for methane, the number of vehicles exceeding:

(a) hydrocarbon standard

(b) carbon monoxide standard

(c) oxides of nitrogen standard

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

5. Evaluation

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 typical of production.

If the average emissions of the quality audit sample, as determined after multiplying emission data for each vehicle tested by the appropriate methane correction and certification deterioration factors in accordance with paragraph C.4, of an engine family for a full or combined calendar quarter of production exceeds the certification standard for a given compound, the Board will consider probable cause exists for finding violation of Section 43106 of the California Health and Safety Code for that family. Section 2109 of Title 13 of the California Administrative Code may be invoked. In order to evaluate test data as to pass/fail rate for short start-up production periods (less than a full calendar quarter) test data will be added to and then evaluated with full production quarters.

For a given engine family, if the average of the first 30 vehicles quality audit tested or if the monthly evaluation of 30 vehicles quality audit tested exceeds the standard for a given compound Section 2110 of Title 13 of the California Administrative Code may be invoked.

This evaluation does not apply to sample sizes less than thirty (30) vehicles. If a sample size for a particular production quarter is less than 30 vehicles, the data will be accumulated on a quarter to quarter basis until at least 30 vehicles have been quality audit tested. That engine family will then be evaluated according to this section. If the last quarter's production has less than 30 tested vehicles, it

will be evaluated with the previous quarters of production until there is a sample size of at least 30 tested vehicles.

In addition, if the Executive Officer has required a larger sample rate and/or shorter reporting period by invoking 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 is at least 30 vehicles.

California Statutes and Regulations

Health and Safety Code

"Section 43106. Each new motor vehicle or engine required pursuant to this part to meet the emission standard established pursuant to Section 43101 shall be, in all material respects, substantially the same in construction as the test motor vehicle or engine, as the case may be, which has been certified by the state board in accordance with Section 43104. However, changes with respect to new motor vehicles or engines previously certified may be made if such changes do not increase emissions above the standards under which those motor vehicles or engines, as the case may be, were certified and are made in accordance with procedures specified by the state board."

Title 13, Administrative Code

Applicable Sections of Article 2, Subchapter 2, Chapter 3 of the California Administrative Code.

will be evaluated with the previous quarters of production until there is a sample size of at least 30 tested vehicles.

In addition, if the Executive Officer has required a larger sample rate and/or shorter reporting period by invoking 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 is at least 30 vehicles.

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Title 13, Administrative Code

Applicable Sections of Article 2, Subchapter 2, Chapter 3 of the California Administrative Code.

DEFINITIONS

For the purposes of these procedures, the following shall apply:

1. Calendar Quarter is defined as those three month periods of time which start on the 1st day 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.

9. Passenger Car is defined as any motor vehicle designed primarily for transportation of persons and having a capacity of 12 persons or less.

10. Light-Duty Truck is defined as 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.

9. Passenger Car is defined as any motor vehicle designed primarily for transportation of persons and having a capacity of 12 persons or less.

10. Light-Duty Truck is defined as 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.

2106. Assembly-Line Inspection Testing. If reports required by an assembly-line test procedure under Article 1 of Subchapter 2 are not in accordance with reporting requirements or if surveillance under Article 2 or Article 3 of Subchapter 2 indicates that assembly-line inspection testing is being improperly performed, or that vehicles are being manufactured which do not comply with the assembly-line emission standards or functional test requirements, the Executive Officer may order corrections of reporting or test procedures, and may, in accordance with Sections 2109 or 2110, as applicable, order correction of vehicles not in compliance with applicable laws, emission standards, or test procedures.

2107. Assembly-Line Quality-Audit Testing. If any official test procedure adopted by the Board specifies that the Board may find a violation of Sections ~~39154~~ 43105 or ~~39155~~ 43106 of the Health and Safety Code or of this Article when a specified percentage of assembly-line vehicles exceeds a standard and when data submitted by the manufacturer indicates such percentage is being exceeded, or if surveillance under Article 2 or Article 3 of Subchapter 2 indicates that assembly-line quality audit testing is being improperly performed, the Executive Officer may invoke the provisions of Sections 2109 or 2110, as applicable.

2108. Order of Executive Officer. Failure to comply with any order of the Executive Officer issued pursuant to this article may result in the revocation or conditioning of ~~approval~~ certification in the manner specified in Sections 2109 or 2110, as applicable.

Title 13

California Administrative Code

2110. Enforcement Action for Assembly-Line Quality Audit Testing of Less Than a Full Calendar Quarter of Production. (a) When, pursuant to an applicable assembly-line test procedure, quality audit testing is being improperly performed or if excessive failure rates are reported prior to regular quarterly reporting dates, or for short start-up production periods, the Executive Officer may require the manufacturer to submit a plan to bring all vehicles in possession of the ~~under~~ manufacturer into compliance. The Executive Officer may order execution of the plan with such changes and additions as he determines are necessary, including additional testing and reporting, consistent with the applicable assembly-line test procedures, to verify acceptability of the plan.

(b) The manufacturer may request a public hearing on the necessity for or scope of any corrective action ordered by the Executive Officer. Such a hearing shall be held within 10 calendar days of receipt of the manufacturer's request for such a hearing. The plan ordered by the Executive Officer shall remain in effect pending such hearing, unless otherwise ordered by the Executive Officer.

(c) If the Executive Officer finds that any corrective action ordered pursuant to subsection (a) of this section has not been taken within a reasonable period of time, ~~promptly,~~ the Board shall hold a public hearing to consider whether approval of such vehicles shall be revoked or conditioned. The Board may revoke or condition approval if it finds that the corrective action ordered by the Executive Officer was reasonable and that the manufacturer failed to comply or to comply ~~promptly~~ within a reasonable period of time.