State of California
AIR RESOURCES BOARD

Resolution 83-3

April 20, 1983

Agenda Item No.: 83-4-3

WHEREAS, Section 39601 of the Health and Safety Code authorizes the Air Resources Board (the "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, Sections 43013, 43101, and 43104 of the Health and Safety Code authorize the Board to adopt emissions standards and test procedures to control air pollution caused by motor vehicles, and pursuant to these provisions the Board has adopted emissions standards and test procedures for new motor vehicles;

WHEREAS, Section 43105 of the Health and Safety Code prohibits a manufacturer from selling, offering for sale, or delivering for sale, to the ultimate purchaser any new motor vehicle or vehicle engine when the manufacturer has violated emission standards or test procedures and has failed to take corrective action, which may include recall of vehicles or engines, and authorizes the Board to establish regulations specifying the procedures for determining, and facts constituting, compliance or noncompliance;

WHEREAS, Sections 43211 and 43212 of the Health and Safety Code provide for the recovery of civil penalties against manufacturers for the sale or offer for sale in California of any motor vehicle which does not comply with emission standards or test procedures;

WHEREAS, Section 43210(a) of the Health and Safety Code authorizes the Board to provide, by regulation, for the testing of motor vehicles on factory assembly lines or in a manner which the Board determines best suited to carry out the purposes of Part 5 of Division 26 of the Health and Safety Code;

WHEREAS, Section 43210(c) of the Health and Safety Code, added by Stats. 1981, ch. 1185 (AB 965), requires that the Board's assembly-line test procedures provide for reduced, statistically valid testing of motor vehicles contained in large engine families for which initial test results indicate compliance with the applicable standards;

WHEREAS, Title 13, California Administrative Code, Section 2061 presently establishes assembly-line test procedures for 1983 and subsequent model year vehicles;

WHEREAS, the assembly-line test procedures for 1983 and subsequent model years provide for quality audit testing, by manufacturers, of not less than two percent of California production of each engine family, except where "Excellence of Quality Control" provisions apply which permit quality audit testing of fewer than two percent of production in specified instances;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impact be adopted as originally proposed if feasible alternative or mitigation measures are available;

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 3.5); and

WHEREAS, the Board finds that:

The existing "Excellence of Quality Control" provisions are deficient in that they do not allow an engine family with emissions means substantially below the standards but with considerable variability to qualify for a reduced sampling rate; they do not permit a reduced sample rate until the second quarter of production; and they allow a full quarter between evaluation of test emission levels;

The amendments to the assembly-line test procedures for 1983 and subsequent model years approved herein are necessary to remedy these deficiencies;

The selection method contained in the amendments approved herein is statistically valid and provides for reduced testing;

The selection method provides for a more equitable test program for large production families;

The selection method provides for adequate demonstration of compliance with applicable standards; and

The amendments approved herein will have no significant adverse environmental impacts.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves the amendments to Title 13, California Administrative Code, Section 2061, set forth in Attachment A hereto.

BE IT FURTHER RESOLVED that the Board hereby approves the amendments to the "California Assembly-Line Test Procedures for 1983 and Subsequent Model Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles", set forth in Attachment B hereto.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt the amendments set forth in Attachments A and B after making them available to the public for a period of 15 days, provided, however, that the Executive Officer shall consider such written comments as may be submitted during this period, and shall present the regulations to the Board for further consideration if he determines that this is warranted in light of the written comments received.

BE IT FURTHER RESOLVED that the Board hereby determines that the regulations and procedures approved herein are in the aggregate at least as protective of public health and welfare as applicable federal standards and are consistent with Sections 202(a) and (b) of the Clean Air Act.

I hereby certify that this is a true and correct copy of Resolution 83-3, as adopted by the Air Resources Board.

Harold Holmes

Harold Holmes, Board Secretary

ATTACHMENT A

Proposed Amendment to Title 13,
California Administrative Code, Section 2061

Amend Section 2061 to read as follows:

2061. Assembly-Line Test Procedures - 1983 and Subsequent Model Years.

New 1983 and subsequent 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 1983 and Subsequent Model Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles," adopted November 24, 1981, as last amended _____, including federally certified light-duty motor vehicles, except as provided in "Guidelines for Certification of 1983 Model Year Federally Certified Light-Duty Motor Vehicles for Sale in California", adopted July 20, 1982.

NOTE: Authority cited: Sections 39515, 39601 and 43210, Health Safety Code. Reference: Sections 43102, 43105, 43210, 43211 and 43212, Health and Safety Code.

ATTACHMENT B

PROPOSED

State of California
AIR RESOURCES BOARD

California Assembly-Line Test Procedures for 1983 and Subsequent Model Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles

Adopted: November 24, 1981
Amended: _____

Note: These procedures are printed in a style to emphasize the differences from the 1983 and Subsequent Model Year Assembly-Line Test Procedures as adopted November 24, 1981. Additions are indicated by underlining and deletions are lined out with dashes.

On September 28, 1982, the Executive Officer conducted a public hearing to consider proposed amendments to these procedures, primarily concerning liquefied petroleum gas- and compressed or liquefied natural gas-powered vehicles. As these proposed amendments have not yet been adopted, they are not set forth in this document. The proposed amendments are set forth in a staff report issued for the September 28, 1982 hearing and available from the Public Information Office.

State of California
AIR RESOURCES BOARD

California Assembly-Line Test Procedures for 1983
and Subsequent 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 1983 and subsequent 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 1981 and Subsequent 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

H & SC Section 43200 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.

Each vehicle emission decal shall have the applicable exhaust emission standards and the following statement displayed thereon with the appropriate model year:

"This vehicle has been tested under and conforms to California Assembly-Line Test Requirements for the (Calendar Model Year) Model Year."

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.

6. COMMUNICATIONS

All reports required by these procedures shall be sent to:

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

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 emissions tested.

A list of the items to be functionally checked and a procedure for performing these checks shall be maintained by the manufacturer and may be requested for review at anytime after production start-up by the Chief, Mobile Source Control Division. When requested, the manufacturer has up to 30 days to submit a copy of these procedures. Within 60 days of receipt the Chief, Mobile Source Control Division may require revisions.

(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 hydrocarbon

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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 hydrocarbon

(HC) and carbon monoxide (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 the air injection system (AIR) instead of with 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.

(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 Title 13, California Administrative Code (C.A.C.) Section 2176 for the applicable model year or, where applicable model year standards are not yet adopted, the latest previous model year values in effect at the time the vehicle is manufactured. An exemption to this requirement will be granted providing the manufacturer submits emission data with each quarterly report listed in one of the following options:

(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 standard deviations 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 operations above. These emission data shall be obtained from stabilized vehicles which have emission control systems with no defects and are properly adjusted to manufacturer's specifications.

(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.

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

The vehicle manufacturer shall randomly select vehicles ~~with~~ from 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 Chief, Mobile Source Control Division, El Monte, CA 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 which follows. The sample rate so chosen shall not be less than 2.0 percent. The manufacturer shall notify the Executive Officer of any change to the sample rate. The date of such change shall be reported in accordance with paragraph ~~7~~ 6 which follows.

A vehicle manufacturer may use, as an alternate to the above vehicle selection procedure, the optional procedure outlined in Appendix A.

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 C.A.C.

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

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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.

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2. VEHICLE PREPARATION AND PRECONDITIONING

(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 constant volume sample (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.2.(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.

(e) If a vehicle is shipped to a remote facility for quality-audit testing, correction of damage or maladjustment, which 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.

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. When requested by the manufacturer, no more than ten days after the production quarter, response from the Executive Officer will be within ten 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.

(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.

3. 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 1981 and Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles" applicable to vehicles tested for exhaust emissions only, with exceptions or additions as shown in paragraph C.2.

4. 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 (DF), exceed the applicable year 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 C.A.C. 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 C.A.C., if probable cause is found for a short start-up production

(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.

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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 H & SC Sections 43211 and 43212 at the end of each full or combined calendar quarter of production. If the Executive Officer invokes C.A.C. 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 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.

~~5. TEST-SAMPLE-SIZE-CRITERIA-AND-BENEFIT-FOR-ACHIEVING-EXCELLENCE-OF QUALITY-CONTROL~~

~~Benefits-will-be-provided-as-incentives-for-reducing-the-number-of vehicles-built-which,-if-repaired,-would-provide-significantly-reduced emissions.--Evaluations-are-to-be-made-by-the-vehicle-manufacturer-on-a quarterly-basis.~~

~~A-statistical-calculation-procedure-for-determining-an-allowable acceptance-number-(c)-will-be-used.--This-method-is-provided-in-the-Appendix. The-calculation-shall-be-applied-to-the-emission-test-results-for-HC,-CO,-and oxides-of-nitrogen-(NOx)-of-quality-audit-vehicles-for-each-production quarter.--When-the-calculation-shows-that-an-engine-family-meets-the-criteria for-excellence-of-quality-control-described-in-the-Appendix,-then-the-vehicle manufacturer-may-change-the-sample-rate-to-less-than-two-percent-(2%) following-the-sample-size-calculation-provided.~~

~~SUSPENSION-OF-BENEFIT~~

~~If-in-a-subsequent-quarter-an-engine-family-does-not-meet-the-criteria for-excellence-of-quality-control,-then-the-originally-selected-two-percent (2%)-minimum-sample-rate-shall-resume-for-the-following-production-quarter's quality-audit-vehicles.~~

~~REINSTATEMENT-OF-BENEFIT~~

~~The-manufacturer-may-change-the-sample-rate-to-less-than-a-two-percent-(2%)-minimum-during-the-following-production-quarter,-when-the-above-criteria-for-excellence-of-quality-control-is-met-again.~~

~~INCREASED-TESTING-FOR-POOR-QUALITY~~

~~When-the-above-statistical-calculation-procedure-shows-that-the-acceptance-number-c',-exceeds-fifteen-(15)-percent-or-more-of-the-vehicles--tested,-and-in-addition-at-least-fifteen-(15)-percent-of-the-vehicles-----tested-individually-exceed-an-emission-standard,-the-manufacturer-shall notify-in-writing-within-ten-working-days-of-the-quarter's-end,-the-Chief-of-Mobile-Source-Control-Division,-who-may-increase-the-quality-audit-sample-size-up-to-a-maximum-of-ten-percent-of-production,-but-not-to-exceed-30-additional-vehicles-per-calendar-quarter.~~

~~6.~~ 5. NON-METHANE (NMHC) OR TOTAL HYDROCARBON (THC) MEASUREMENTS

(a) For an engine family certified to the NMHC standard, the manufacturer shall measure the NMHC content which shall be multiplied by the non-methane DF.

(b) For an engine family certified to the THC standard, the measured THC value shall be multiplied by the THC DF.

~~7.~~ 6. 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 C.A.C. Section 2109 or 2110, Chapter 3, Title 13. 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, the Chief, Mobile Source Control Division, shall be notified in writing within 10 working days whenever an engine family exceeds an emission standard.

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, test weight used, dynamometer power absorber setting in horsepower, engine code or calibration number and test location)).

(c) The CVS exhaust emission data and carbon dioxide data for each test vehicle.

~~REINSTATEMENT-OF-BENEFIT~~

~~The-manufacturer-may-change-the-sample-rate-to-less-than-a-two-percent-(2%)-minimum-during-the-following-production-quarter,-when-the-above-criteria-for-excellence-of-quality-control-is-met-again.~~

~~INCREASED-TESTING-FOR-POOR-QUALITY~~

~~When-the-above-statistical-calculation-procedure-shows-that-the-acceptance-number-is,-exceeds-fifteen-(15)-percent-or-more-of-the-vehicles--tested,-and-in-addition-at-least-fifteen-(15)-percent-of-the-vehicles-----tested-individually-exceed-an-emission-standard,-the-manufacturer-shall notify-in-writing-within-ten-working-days-of-the-quarter's-end,-the-Chief-of-Mobile-Source-Control-Division,-who-may-increase-the-quality-audit-sample-size-up-to-a-maximum-of-ten-percent-of-production,-but-not-to-exceed-30-additional-vehicles-per-calendar-quarter.~~

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(c) The CVS exhaust emission data 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. DF's shall be stated, then applied to the data. The data reported after the DF's 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
.XXX	.XX	.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 deviations of the sample for HC, CO and NOx both before and after applying DF's. In the latter case, the individual test points shall be multiplied by the DFs 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 NMHC or THC standards apply.

(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.

8. 7. SPECIAL REQUIREMENTS FOR SMALL VOLUME VEHICLE MANUFACTURERS

The following requirements apply only to those vehicle manufacturers who were granted relief, by the Executive Officer, under Title 13, C.A.C., Section 1960.4, Special Standards for 1982 and Subsequent Model Passenger Cars and 1983 and Subsequent Model Light-Duty Trucks and Medium-Duty Vehicles, 0-3999 Pound Equivalent Inertia Weight.

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 1960.4.

a. Additional Reporting Requirements for NOx Emissions

(1) The cumulative average of NOx emissions from the entire quality-audit light-duty trucks (LDT) plus medium-duty vehicles (MDV) 0-3999 lbs. equivalent inertia weight, shall be reported both before and after applying DF's for the 1983 model year to:

(i) All 1983 models tested during each calendar quarter.

(ii) All 1983 models tested to date by the end of each calendar quarter.

(iii) All 1983 models tested to date by December 31, 1982, by June 30, 1983, and by December 31, 1983.

(2) The combined averages from the entire passenger car (PC) line and, separately, LDT and MDV lines, 0-3999 lbs. equivalent inertia weight, shall be reported both before and after applying DF's for:

(i) All 1983 model PC's tested during each calendar quarter.

(ii) All 1984 model PC's and, separately, LDT's plus MDV's tested during each calendar quarter.

(iii) All 1985 model LDT's plus MDV's tested during each calendar quarter.

(3) 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 0.7 gm/mi NOx production level based on test results by engine families separately for 1983 and 1984 model PC's and 1984 and 1985 model LDT's plus MDV's tested and on a cumulative basis for 1983 model LDT's plus MDV's. The first evaluation will be made based on averaged NOx test data accumulated through December 31, 1982. Subsequent evaluations will be made semiannually for data accumulated through each June 30 and December 31 periods until December 31, 1984, for PC's and December 31, 1985, for LDT's plus MDV's model year productions.

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 1960.4.

a. Additional Reporting Requirements for NOx Emissions

(1) The cumulative average of NOx emissions from the entire quality-audit light-duty trucks (LDT) plus medium-duty vehicles (MDV) 0-3999 lbs. equivalent inertia weight, shall be reported both before and after applying DF's for the 1983 model year to:

(i) All 1983 models tested during each calendar quarter.

(ii) All 1983 models tested to date by the end of each calendar quarter.

(iii) All 1983 models tested to date by December 31, 1982, by June 30, 1983, and by December 31, 1983.

(2) The combined averages from the entire passenger car (PC) line and, separately, LDT and MDV lines, 0-3999 lbs. equivalent inertia weight, shall be reported both before and after applying DF's for:

(i) All 1983 model PC's tested during each calendar quarter.

(ii) All 1984 model PC's and, separately, LDT's plus MDV's tested during each calendar quarter.

(iii) All 1985 model LDT's plus MDV's tested during each calendar quarter.

(3) 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 0.7 gm/mi NOx production level based on test results by engine families separately for 1983 and 1984 model PC's and 1984 and 1985 model LDT's plus MDV's tested and on a cumulative basis for 1983 model LDT's plus MDV's. The first evaluation will be made based on averaged NOx test data accumulated through December 31, 1982. Subsequent evaluations will be made semiannually for data accumulated through each June 30 and December 31 periods until December 31, 1984, for PC's and December 31, 1985, for LDT's plus MDV's model year productions.

If the NOx value exceeds the 0.7 gm/mi level, but the manufacturer shows that unanticipated technical problems caused the 0.7 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 0.7 gm/mi NOx levels 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 C.A.C. if combined test results exceed the 0.7 gm/mi NOx level separately for 1983 and 1984 model PC's and 1984 and 1985 model LDT's plus MDV's, and on a cumulative basis for 1983 model LDT's plus MDV's provided that 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 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 first 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 percent 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.

APPENDIX

Evaluating Vehicle Emissions Assembly Line Quality Control from Quality Audit Data

I. Procedure for Determining Excellence of Quality Control

A. Calculation of Acceptance Number, Individually for HC, CO, and NOx

1. Calculate the mean and standard deviation of the entire quality audit data set:

$$\text{Mean} = \bar{x} = (\Sigma x_i)/N$$

$$\text{Standard deviation} = S = \left(\frac{\Sigma x_i^2 - \frac{(\Sigma x_i)^2}{N}}{N-1} \right)^{1/2}$$

where x_i = Individual emission values.

N = Total number of data points.

2. Calculate Cut Point

Provisional cut point = $\bar{x}$ + 3 Std. Deviations

3. Identify and remove all data values greater than the provisional cut point and repeat steps 1 and 2.

4. Continue with steps 1, 2, and 3 until no values are found above the final cut point.

5. The acceptance number (c) is the total number of data values above the final cut point.

B. Determination of Excellence of Quality Control from Acceptance Number

Excellence of quality control may exist if the acceptance number calculated in paragraph I.A. is equal to or less than the value given in the table below for the corresponding quality audit sample size.

Quality Audit Sample Size	Allowable Acceptance Number (c)
50-59	1
60-99	2
100-139	3
140-209	4
210-270	5

If the quality audit sample size is greater than 270, the evaluation will be made on the first 270 quality audit vehicles tested.

C. Determination of Quality Audit Sample Size for the Next Quarter when the acceptance number criteria in paragraph I.B. are met.

1. Calculate Tchebysheff's K for each contaminant:

$$K_i = \frac{\left(\text{Standard}_i - \bar{x}_i \right)}{\sqrt{\frac{S_i^2}{n} \cdot \frac{(N-n)}{N}}}$$

where i = contaminant, HC, CO, NOx
standard = emission standard for particular contaminant

$\bar{x}_i$ = mean of particular contaminant for current quarter

B. Determination of Excellence of Quality Control from Acceptance Number

Excellence of quality control may exist if the acceptance number c, calculated in paragraph I.A. is equal to or less than the value given in the table below for the corresponding quality audit sample

Quality Audit Sample Size	Allowable Acceptance Number (c)
50-59	1
60-99	2
100-139	3
140-209	4
210-270	5

If the quality audit sample size is greater than 270, the evaluation will be made on the first 270 quality audit vehicles tested.

C. Determination of Quality Audit Sample Size for the Next Quarter when the acceptance number criteria in paragraph I.B. are met.

1. Calculate Tchebysheff's K for each contaminant:

$$K_i = \frac{\left(\text{Standard}_i - \bar{x}_i \right)}{\sqrt{\frac{S_i^2}{n} \cdot \frac{(N-n)}{N}}}$$

where i = contaminant, HC, CO, NOx
standard = emission standard for particular contaminant

$\bar{x}_i$ = mean of particular contaminant for current quarter

S_i^2 = variance of particular contaminant for current quarter
N = Total number of vehicles produced for the current quarter.
n = Quality Audit sample size for the current quarter

a. If all K_i = 2, the sample size for the next quarter = 50.

b. If any K_i = 2, the sample size for the next quarter will be 2% (minimum)

NOTE: For manufacturers whose production is less than 2500, the sample size of 2% (or less than 50) shall apply.

II. General Procedure Explanation

The overall procedure for determining the next quarter's quality audit sampling rate is presented in a flow diagram in Figure 1. The flow sheet is for a period of one model year.

The sampling rate is a 2% minimum of production for all manufacturers for the first quarter. The sampling rate may be reduced for the following quarters when the criteria for excellence of quality control is met the previous quarter using the calculations of Section I. The acceptance number c' is calculated for the current quarter as per Section I.A. The table in Section I.B. is entered to find the allowable acceptance number c for the sample size of the current quarter. If the acceptance number c' is equal to or less than the allowable acceptance number c for HC, CO and NOx, then that engine family may meet the criteria for excellence of quality control. If the engine family does not meet these criteria, the sample size for the next quarter for that engine family shall be 2% of the next quarter's production.

If the engine family meets the criteria, k is calculated for hydrocarbons, CO and NOx, according to Section I.C. The sample size is 50 for the next quarter if all three k_s K_i's are equal to or greater than 2. If i is less than 2, the sample size will be a minimum of two percent.

II. General Procedure Explanation

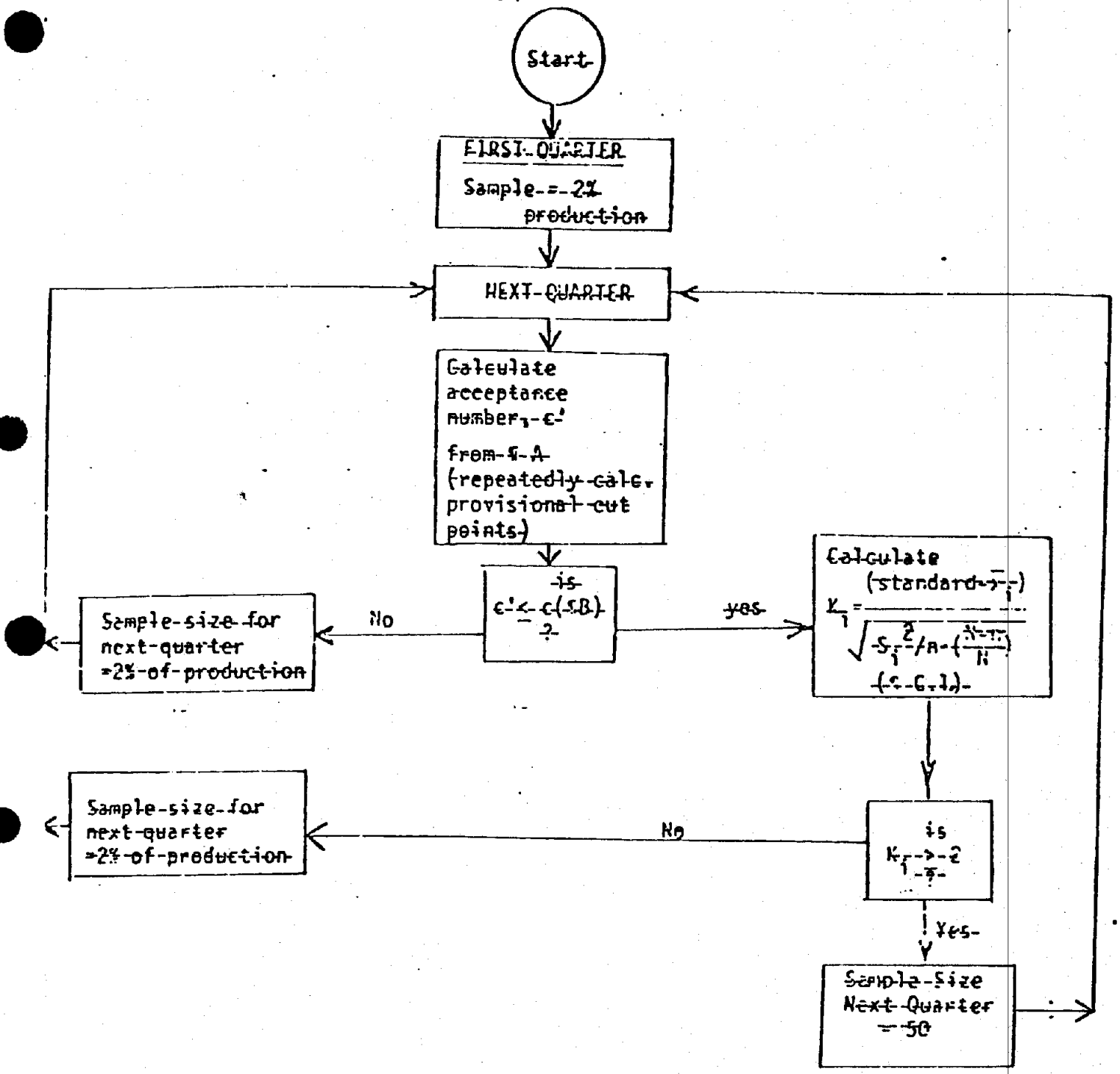
The overall procedure for determining the next quarter's quality audit sampling rate is presented in a flow diagram in Figure 1. The flow sheet is for a period of one model year.

The sampling rate is a 2% minimum of production for all manufacturers for the first quarter. The sampling rate may be reduced for the following quarters when the criteria for excellence of quality control is met the previous quarter using the calculations of Section I. The acceptance number c' is calculated for the current quarter as per Section I.A. The table in Section I.B. is entered to find the allowable acceptance number c for the sample size of the current quarter. If the acceptance number c' is equal to or less than the allowable acceptance number c for HC, CO and NOx, then that engine family may meet the criteria for excellence of quality control. If the engine family does not meet these criteria, the sample size for the next quarter for that engine family shall be 2% of the next quarter's production.

If the engine family meets the criteria, k is calculated for hydrocarbons, CO and NOx, according to Section I.C. The sample size is 50 for the next quarter if all three k_s K_i's are equal to or greater than 2. If i is less than 2, the sample size will be a minimum of two percent.

FIGURE 1

PROCEDURE TO DETERMINE QUALITY AUDIT SAMPLE SIZE



APPENDIX A

Alternate Quality Audit Vehicle Selection Criteria

This Appendix sets forth the alternative procedure for selection of Quality Audit vehicles. It includes the flow diagram in Figure A-1.

1. Vehicles shall be randomly selected at a rate of 2.0% of engine family production at the beginning of production. When tests results of 30 vehicles have been accumulated, an evaluation as indicated below shall be made.

2. Calculate the family mean and standard deviation of each pollutant (HC, CO, NOx). Identify vehicles which have emission levels greater than three standard deviations above the mean. Eliminate these emission data points and recalculate the mean and standard deviation. Continue the calculation until there are no values greater than three standard deviations above the mean. Count the number of these data points greater than the standard (outliers). If the number of outliers is equal to or less than the allowable number in Table A-1 for each pollutant, the engine family is eligible to continue to a second evaluation shown in paragraph 3 below. Otherwise, sampling must continue at a rate of 2.0% of production for the rest of the month.

3. If the allowable outlier criteria is met, the family mean, standard deviation, and sample size determined for each contaminant before excluding any outliers, is substituted in the following expression:

$$\frac{(\text{emission standard} - \text{mean})\ (\sqrt{N})}{(\text{standard deviation})}$$

If the expression is greater than C in Table A-2 below, and the manufacturer reasonably estimates that the quarterly engine family production will exceed 5,000 vehicles, the sampling rate for the remaining portion of the calendar month following the date of selection of the last of the 30 vehicles shall be 30 per month, applied on a prorated basis. If the expression is greater than C in Table A-2 below, and the manufacturer reasonably estimates that the quarterly engine family production will be 5,000 vehicles or less, the sampling rate for the remaining portion of the calendar month following the date of selection of the last of the 30 vehicles shall be 17 per month, applied on a prorated basis. If the expression is equal to or less than C in Table A-2, the sampling rate shall continue to be 2.0% of production for the remaining portion of the month in which selection of the 30 vehicles is completed. The value of C is a function of the coefficient of variation (standard deviation/mean). The coefficient of variation and "C" shall be rounded to the number of decimal places shown in Table A-2.

Table A-1

Sample Size	Allowable Outliers	Sample Size	Allowable Outliers
30-60	0	521-540	20
61-90	1	541-570	21
91-120	2	571-590	22
121-140	3	591-610	23
141-170	4	611-630	24
171-190	5	631-660	25
191-220	6	661-680	26
221-240	7	681-700	27
241-270	8	701-720	28
271-290	9	721-750	29
291-310	10	751-770	30
311-340	11	771-790	31
341-360	12	791-810	32
361-380	13	811-840	33
381-410	14	841-860	34
411-430	15	861-880	35
431-450	16	881-900	36
451-480	17	901-920	37
481-500	18		
501-520	19		

1-32	1	430-478	11
33-68	2	479-528	12
69-107	3	529-578	13
108-149	4	579-629	14
150-193	5	630-680	15
194-238	6	681-731	16
239-285	7	732-783	17
286-332	8	784-835	18
333-380	9	836-887	19
381-429	10	888-939	20

Table A-2

Coefficient of Variation	C
0.1	0.5
0.2	1.2
0.3	1.8
0.4	2.5
0.5	3.1
0.6	3.8
0.7	4.4
0.8	5.1
0.9	5.7

4. For each remaining calendar month in the quarter, both mathematical procedures set forth in paragraphs 2 and 3 shall be repeated at the end of the preceding month, using all of the test data accumulated in the quarter. The sampling rate for each remaining calendar month in the quarter shall be 30 vehicles per month, 17 vehicles per month, or 2.0% of production as determined under the standards in paragraph 3.

5. At the end of the quarter, all of the data accumulated during the quarter is evaluated, and the compliance of the family with emission standards is determined.

6. For each subsequent quarter, the preceding sample selection method shall be followed. The sample rate determination for the first month of each subsequent quarter shall be based on the accumulated data from the previous quarter. The sample rate for the succeeding months of the quarter shall be determined as previously set forth.

7. If the start of production does not coincide with the first of a quarter, the sequence for sample rate determination shall be followed, but references to remaining calendar months may not be appropriate.

8. Where a manufacturer has sampled vehicles at a rate of 17 per month following a reasonable estimate that the quarterly engine family production will be 5,000 vehicles or less, and subsequently determines, or reasonably should determine based on information available to the manufacturer, that the quarterly engine family production will exceed 5,000 vehicles, the manufacturer shall increase the sampling rate for the quarter such that the requirements of paragraph 3 applicable to families reasonably estimated to exceed a quarterly production of 5,000 vehicles are satisfied.

FIGURE A-1

FIRST QUARTER OF PROD.:

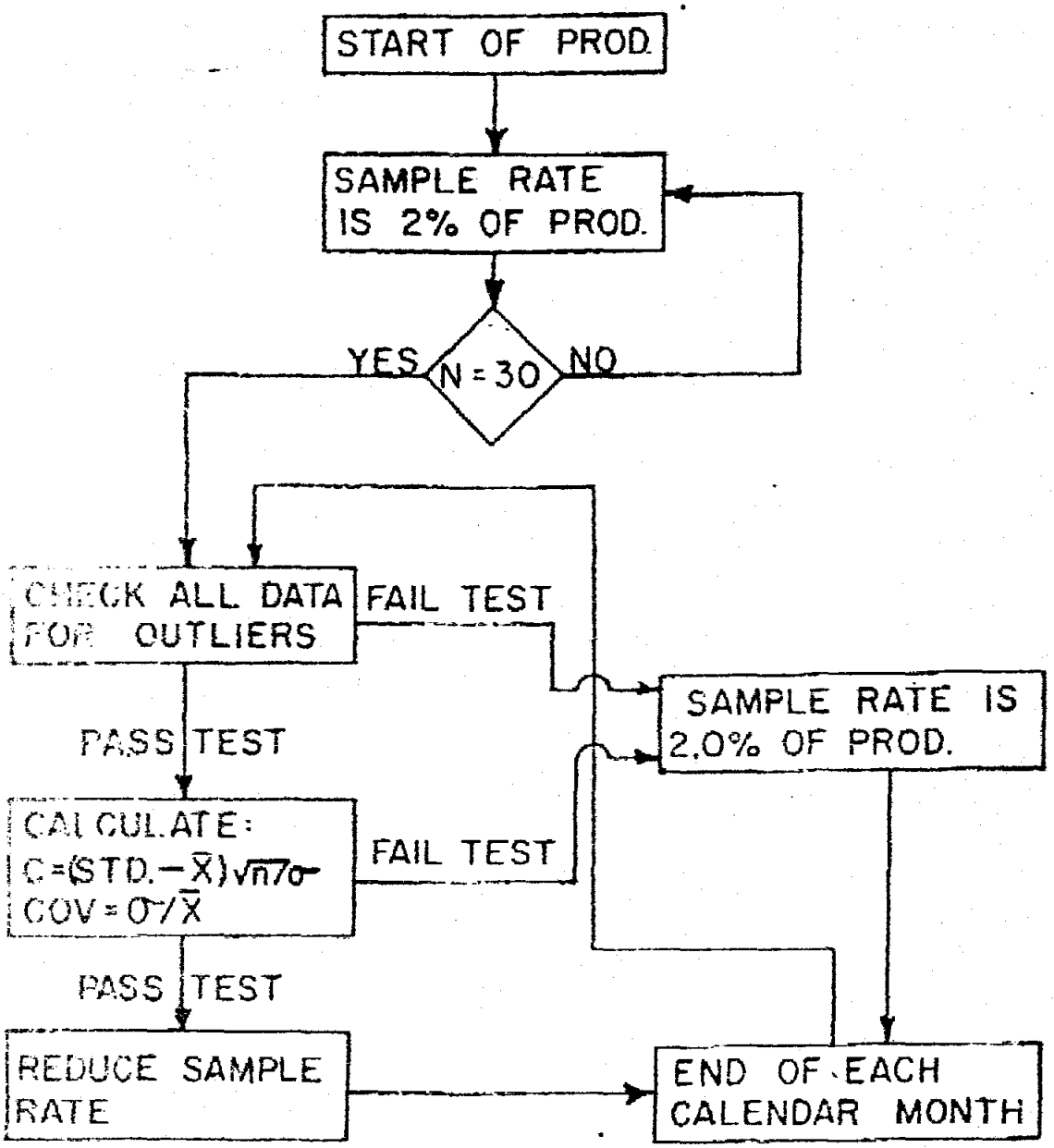


FIGURE A-1

SUBSEQUENT QUARTERS

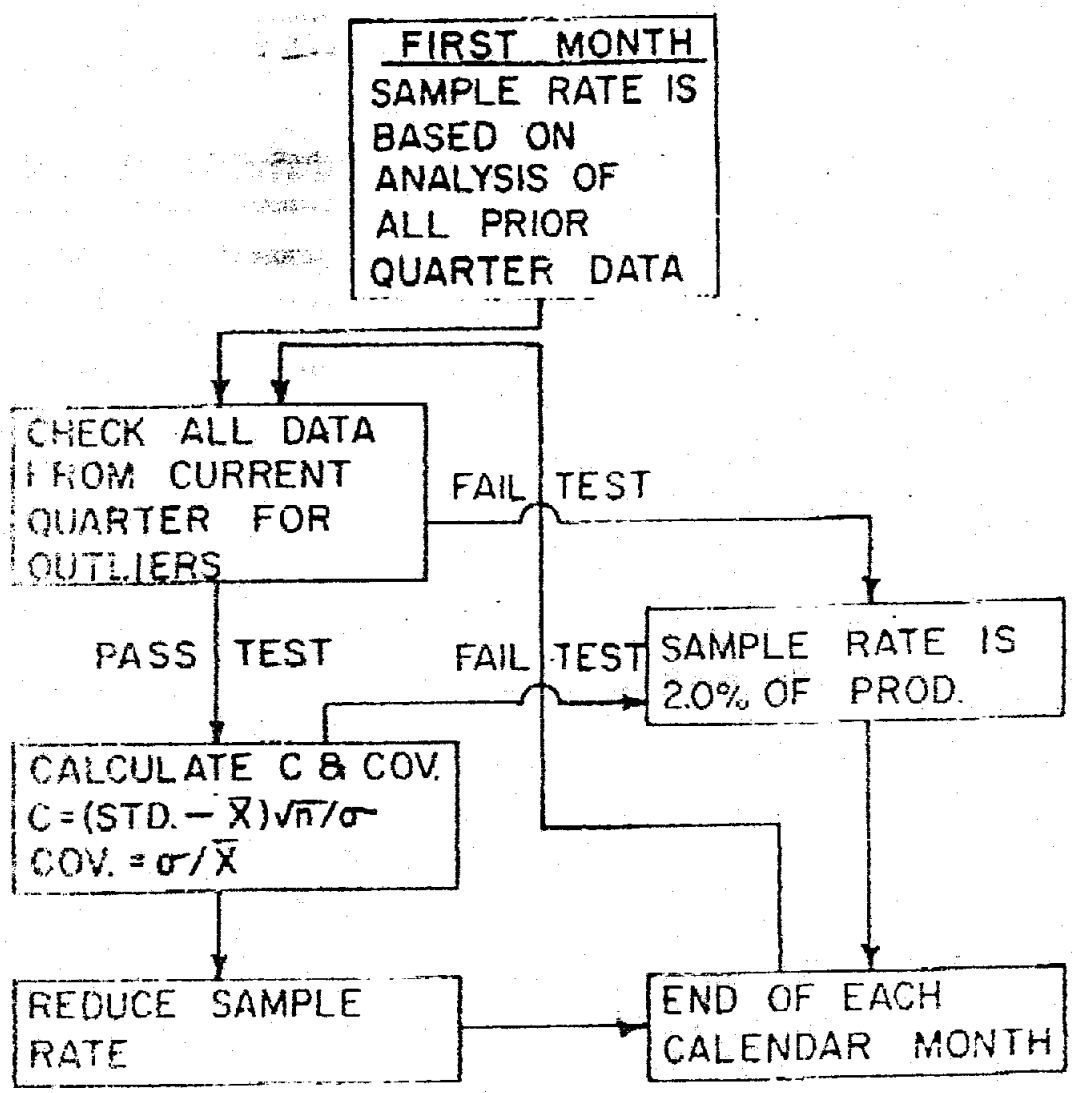
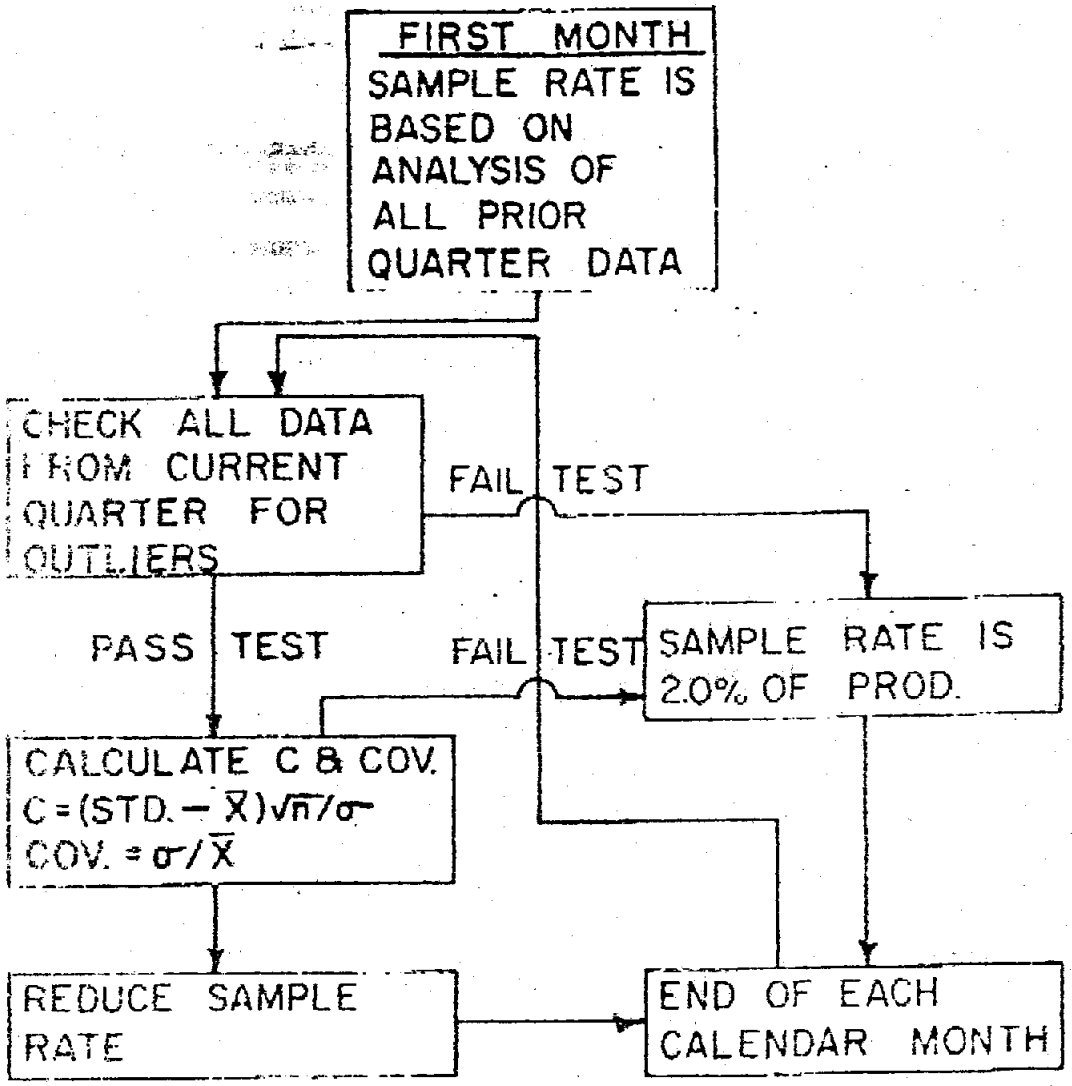


FIGURE A-1

SUBSEQUENT QUARTERS



05-1

FIGURE A-1

OUTLIER CALCULATION PROCEDURE

1. CALCULATE THE MEAN AND STANDARD DEVIATION FOR EACH POLLUTANT WITH DF APPLIED.
2. CALCULATE THE MEAN PLUS THREE STANDARD DEVIATIONS.
3. IDENTIFY ALL EMISSION DATA GREATER THAN $\bar{X} + 3\sigma$.
4. REMOVE THE OUTLIERS FROM THE DATA AND RECALCULATE THE MEAN AND STANDARD DEVIATION.
5. REPEAT STEPS 2, 3, & 4
6. REPEAT STEPS 2 & 3
7. IDENTIFY ALL OUTLIERS THAT EXCEED APPLICABLE CERTIFICATION STANDARD AND COUNT THE NUMBER.
8. COMPARE THE NUMBER OF OUTLIERS WITH THE MAXIMUM ALLOWED BY THE OUTLIER TABLE. IF THE NUMBER OF OUTLIERS EXCEEDS THE MAXIMUM, SAMPLE RATE IS 2.0% OF PRODUCTION. IF THE NUMBER IS LESS THAN THE MAXIMUM ALLOWED, CALCULATE "C".

State of California
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Amendments to Assembly-Line Test Procedures for Certain 1983 and Subsequent Model Year Vehicles, Regarding Quality Audit Vehicle Sample Selection, and Adoption of Amendments to Title 13, California Administrative Code, Section 2061, Incorporating the Test Procedures

Agenda Item No.: 83-4-3

Public Hearing Date: April 20, 1983

Response Date: May 12, 1983

Issuing Authority: Executive Officer

Comment: No comments were received identifying any significant environmental issues pertaining to this item. The staff report identified no adverse environmental effects.

Response: N/A

CERTIFIED: _____
Executive Officer

Date: Sept. 8, 1983

State of California
AIR RESOURCES BOARD

Public Hearing to Consider Amendments to the Assembly-Line Test Procedures for Certain 1983 and Subsequent Model Year Vehicles, Regarding Quality Audit Vehicle Sample Selection, and Adoption of Amendments to Title 13, California Administrative Code, Section 2061, Incorporating the Test Procedures

Hearing Date: April 20, 1983
Public Availability Date: April 27, 1983

On April 20, 1983, the Air Resources Board approved amendments to its "California Assembly-Line Test Procedures for 1983 and Subsequent Model Year Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles", and to Section 2061, Title 13, California Administrative Code, which establishes the test procedures. Attached is a copy of the Board's Resolution 83-3, approving these amendments.

The approved amendments were identical to those previously proposed by staff, with the exception of certain modifications to the contents of Appendix A of the Test Procedures. Appended to Resolution 83-3 are the approved Test Procedures, showing deletions from the original proposed language of Appendix A in slashes, and additions in double underline. Also attached are the approved amendments to Section 2061 of Title 13, California Administrative Code.

In approving the amendments to the Test Procedures and Section 2061, the Board directed the Executive Officer to adopt the amendments after making them available to the public for a period of 15 days, provided, however, that the Executive Officer shall consider such written comments as may be submitted during this period, and shall present the regulations to the Board for further consideration if he determines that this is warranted in light of the written comments received. Any written comments must be received by May 12, 1983, to be considered.

State of California

Memorandum

To : Gordon Van Vleck
Secretary
Resources Agency

Date : December 7, 1983

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

From : Harold Holmes
Board Secretary
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.

ATTACHMENTS
Resolution 83-3
Resolution 83-7
Resolution 83-8