

(2) Where engine or vehicle storage areas or facilities are concerned, *operating hours* means all times during which personnel other than custodial personnel are at work in the vicinity of the area or facility and have access to it.

(3) Where facilities or areas other than those covered by paragraph (h)(2) of this section are concerned, *operating hours* means all times during which an assembly line is in operation, engine or vehicle assembly is taking place, testing repair, service accumulation, preparation or compilation of records is taking place, or any other procedure or activity related to engine or vehicle manufacture, assembly or testing is being carried out in a facility.

(4) *Reasonable assistance* includes, but is not limited to, clerical, copying, interpreting and translating services, and making personnel of the facility being inspected available during their working hours on an EPA Enforcement Officer's request to inform the EPA Enforcement Officer of how the facility operates and to answer his or her questions. Any employee whom an EPA Enforcement Officer requests the manufacturer to cause to appear for questioning will be entitled to be accompanied, represented and advised by counsel.

§ 86.1110-87 Sample selection.

(a) Engines or vehicles comprising a test sample which are required to be tested pursuant to a PCA in accordance with this subpart will be selected at the location and in the manner specified by EPA. If a manufacturer determines that the test engines or vehicles cannot be selected in the manner specified by EPA, an alternative selection procedure may be employed, provided that the manufacturer requests approval of the alternative procedure in advance of the start of test sample selection and that the Administrator approves the procedure.

(b) The manufacturer shall have assembled the test engines or vehicles of the configuration selected for testing using its normal mass production processes for engines or vehicles to be distributed into commerce. In the case of heavy-duty engines, if the test engines are selected at a location where they

do not have their operational and emission control systems installed, EPA will specify the manner and location for selection of components to complete assembly of the engines. The manufacturer shall assemble these components onto the test engines using normal assembly and quality control procedures as documented by the manufacturer.

(c) No quality control, testing, or assembly procedures will be used on the completed test engine or vehicle or any portion thereof, including parts and subassemblies, that will not be used during the production and assembly of all other engines or vehicles of that configuration.

(d) The EPA Enforcement Officers may specify that they, rather than the manufacturer, will select the test engines or vehicles.

(e) The order in which test engines or vehicles are selected determines the order in which test results are to be used in applying the PCA testing plan in accordance with § 86.1112-87.

(f) The manufacturer shall keep on hand all engines or vehicles comprising the test sample until such time as a compliance level is determined in accordance with § 86.1112-87(a) except that the manufacturer may ship any tested engine or vehicle which has not failed in accordance with § 86.1112-87(f)(1). However, once the manufacturer ships any test engine or vehicle, it relinquishes the prerogative to conduct retests as provided in § 86.1111-87(i).

§ 86.1111-87 Test procedures for PCA testing.

(a)(1) For heavy-duty engines, the prescribed test procedure for PCA testing is the Federal Test Procedure as described in subparts N, I, and P of this part.

(2) For heavy-duty vehicles, the prescribed test procedure for PCA testing is described in subpart M of this part.

(3) For light-duty trucks, the prescribed test procedure for PCA testing is the Federal Test Procedure as described in subparts B and P of this part.

(4) During the testing of heavy-duty diesel engines, the manufacturer shall decide for each engine, prior to the start of the initial cold cycle, whether

the measurement of background particulate is required for the cold and hot cycles to be valid. The manufacturer may choose to have different requirements for the cold and hot cycles. If a manufacturer chooses to require the measurement of background particulate, failure to measure background particulate shall void the test cycle regardless of the test results. If a test cycle is void, the manufacturer shall retest using the same validity requirements of the initial test.

(5) When testing light-duty trucks, the following exceptions to the test procedures in subpart B are applicable:

(i) The manufacturer may use gasoline test fuel meeting the specifications of paragraph (a) of § 86.113 for mileage accumulation. Otherwise, the manufacturer may use fuels other than those specified in this section only with advance approval of the Administrator.

(ii) The manufacturer may measure the temperature of the test fuel at other than the approximate midvolume of the fuel tank, as specified in paragraph (a) of § 86.131, and may drain the test fuel from other than the lowest point of the fuel tank, as specified in paragraph (b) of § 86.131, with the advance approval of the Administrator.

(iii) The manufacturer may perform additional preconditioning on PCA test vehicles other than the preconditioning specified in § 86.132 only if the additional preconditioning has been performed on certification test vehicles of the same configuration.

(iv) The manufacturer shall perform the heat build procedure 11 to 34 hours following vehicle preconditioning rather than according to the time period specified in paragraph (a) of § 86.133.

(v) The manufacturer may substitute slave tires for the drive wheel tires on the vehicle as specified in paragraph (e) of § 86.135, provided that the slave tires are the same size as the drive wheel tires.

(vi) The cold start exhaust emission test described in § 86.137 shall follow the heat build procedure described in § 86.133 by not more than one hour.

(vii) In performing exhaust sample analysis under § 86.140:

(A) When testing diesel vehicles, the manufacturer shall allow a minimum

of 20 minutes warm-up for the HC analyzer, and a minimum of 2 hours warm-up for the CO, CO₂ and NO_x analyzers. [Power is normally left on for infrared and chemiluminescent analyzers. When not in use, the chopper motors of the infrared analyzers are turned off and the phototube high voltage supply to the chemiluminescent analyzers is placed in the standby position.]

(B) The manufacturer shall exercise care to prevent moisture from condensing in the sample collection bags.

(viii) The manufacturer need not comply with § 86.142, since the records required therein are provided under other provisions of this subpart.

(ix) In addition to the requirements of subpart B of this part, the manufacturer shall prepare gasoline-fueled vehicles as follows prior to exhaust emission testing:

(A) The manufacturer shall inspect the fuel system to insure the absence of any leaks of liquid or vapor to the atmosphere by applying a pressure of 14.5 ± 0.5 inches of water to the fuel system, allowing the pressure to stabilize, and isolating the fuel system from the pressure source. Following isolation of the fuel system, pressure must not drop more than 2.0 inches of water in 5 minutes. If required, the manufacturer shall perform corrective action in accordance with paragraph (d) of this section.

(B) When performing this pressure check, the manufacturer shall exercise care to neither purge nor load the evaporative emission control system.

(C) The manufacturer shall not modify the test vehicle's evaporative emission control system by component addition, deletion, or substitution, except to comply with paragraph (a)(4)(ii) of this section if approved in advance by the Administrator.

(b)(1) The manufacturer shall not adjust, repair, prepare, or modify the engines or vehicles selected for testing and shall not perform any emission tests on engines or vehicles selected for testing pursuant to a PCA request unless the adjustment, repair, preparation, modification, or tests are documented in the manufacturer's engine or vehicle assembly and inspection procedures and are actually performed on

all engines or vehicles produced or unless these adjustments or tests are required or permitted under this subpart or are approved in advance by the Administrator.

(2) For 1984 and later model years the Administrator may adjust or cause to be adjusted any engine parameter which the Administrator has determined to be subject to adjustment for certification, Selective Enforcement Audit and Production. Compliance Audit testing in accordance with § 86.084-22(e)(1), to any setting within the physically adjustable range of that parameter, as determined by the Administrator in accordance with § 86.084-2(e)(3)(ii), prior to the performance of any tests. However, if the idle speed parameter is one which the Administrator has determined to be subject to adjustment, the Administrator shall not adjust it to any setting which causes a lower engine idle speed than would have been possible within the physically adjustable range of the idle speed parameter if the manufacturer had accumulated 125 hours of service on the engine or 4,000 miles on the vehicle under paragraph (c) of this section, all other parameters being identically adjusted for the purpose of the comparison. The manufacturer may be requested to supply information to establish such an alternative minimum idle speed. The Administrator, in making or specifying these adjustments, may consider the effect of the deviation from the manufacturer's recommended setting on emissions performance characteristics as well as the likelihood that similar settings will occur on in-use heavy-duty engines or light-duty trucks. In determining likelihood, the Administrator may consider factors such as, but not limited to, the effect of the adjustment on engine or vehicle performance characteristics and surveillance information from similar in-use engines or vehicles.

(c) Prior to performing emission testing on a PCA test engine, the manufacturer may accumulate on each engine a number of hours of service equal to the greater of 125 hours or the number of hours the manufacturer accumulated during certification on the emission-data engine corresponding to the configuration tested during PCA. Prior to

performing emission testing on a PCA test vehicle, the manufacturer may accumulate a number of miles equal to the greater of 4,000 miles or the number of miles the manufacturer accumulated during certification on the emission-data vehicle corresponding to the configuration tested during PCA. Service or mileage accumulation may be performed in any manner the manufacturer desires.

(d) No maintenance shall be performed on test engines or vehicles after selection for testing nor will any test engine or vehicle substitution or replacement be allowed, unless requested of and approved by the Administrator in advance of the performance of any maintenance or engine or vehicle substitution.

(e) The manufacturer shall expeditiously ship test engines or vehicles from the point of selection to the test facility or other location to meet any other requirements of this subpart. If the test facility is not located at or in close proximity to the point of selection, the manufacturer shall assure that test engines or vehicles arrive at the test facility within 24 hours of selection, except that the Administrator may approve more time based upon a request by the manufacturer accompanied by a satisfactory justification.

(f) If an engine or vehicle cannot complete the service or mileage accumulation or emission tests because of engine or vehicle malfunction, the manufacturer may request that the Administrator authorize the repair of the engine or vehicle. If the engine or vehicle cannot be repaired expeditiously, EPA may delete it from the test sequence.

(g)(1) Heavy-duty engine manufacturers with projected sales bound for the United States market for that year of 30,000 or greater, as made in their respective Applications for Certification, shall complete emission testing at their testing facility on a minimum of two engines per 24 hour period, including voided tests.

(2) Heavy-duty engine manufacturers with projected sales bound for the United States market for that year of less than 30,000, as made in their respective Applications for Certification, Shall complete emission testing at one

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engine per 24 hour period, including voided tests.

(3) Light-duty truck manufacturers shall complete emission testing on a minimum of four vehicles per 24 hour period, including voided tests.

(4) The Administrator may approve a longer period of time for conducting emission tests based upon a request by a manufacturer accompanied by a satisfactory justification.

(h) The manufacturer shall perform test engine or vehicle selection, shipping, preparation, service or mileage accumulation, and testing in such a manner as to insure that the audit is performed in an expeditious manner.

(i) The manufacturer may retest any engines or vehicles tested during a Production Compliance Audit once a compliance level has been established in accordance with § 86.1112-87 based on the first test on each engine or vehicle. The Administrator may approve retesting at other times based upon a request by the manufacturer accompanied by a satisfactory justification. The manufacturer may test each engine or vehicle a total of three times. The manufacturer shall test each engine or vehicle the same number of times. The manufacturer may accumulate additional service or mileage before conducting a retest, subject to the provisions of paragraph (c) of this section.

[50 FR 35388, Aug. 30, 1985, as amended at 62 FR 47123, Sept. 5, 1997]

§ 86.1112-87 Determining the compliance level and reporting of test results.

(a) A manufacturer that has elected to conduct a PCA in accordance with § 86.1106-87 may establish the compliance level for a pollutant for any engine or vehicle configuration by using the primary PCA sampling plan or either of two optional reduced PCA sampling plans (the fixed reduced sampling plan or the sequential reduced sampling plan) described below. A manufacturer that uses either of the two optional reduced PCA sampling plans may elect to continue testing and establish a compliance level under the primary PCA sampling plan.

(1) A manufacturer that elects to conduct a PCA for a pollutant using the primary PCA sampling plan shall:

(i) Conduct emission tests on 24 engines or vehicles in accordance with § 86.1111-87 for the pollutants for which the PCA was initiated. If the PCA follows an SEA failure, the number of additional tests conducted shall be the difference between 24 and the number of engines or vehicles tested in the SEA. If 24 or more engines or vehicles were tested in the SEA, no additional tests shall be conducted; and

(ii) Rank the final deteriorated test results, as defined by paragraph (e) of this section, obtained for that pollutant in order from the lowest to the highest value. If the PCA follows an SEA failure, all SEA test results for that pollutant shall be included in this ranking.

(iii) The compliance level for that pollutant is the final deteriorated test result in the sequence determined from table 1 of appendix XII of these regulations.

(2) A manufacturer that elects to conduct a PCA for a pollutant using the fixed reduced PCA sampling plan shall:

(i) Select a sample size between 3 and 23 engines or vehicles. If the PCA follows an SEA failure, the sample size selected cannot be less than the number of engines or vehicles tested during the SEA; and

(ii) Conduct emission tests on the selected sample in accordance with § 86.1111-87 for the pollutants for which the PCA was initiated.

(iii) The compliance level for the pollutant is the result of the following equation, using the test results obtained in paragraph (a)(2)(i) of this section and all SEA test results for that pollutant if the PCA follows an SEA failure:

$$CL = \bar{X} + Ks$$

where:

CL=The compliance level.≤

\bar{X} =The mean of the final deteriorated test results, as defined by paragraph (e) of this section.

K=A value that depends on the size of the test sample. See table 2 of appendix XII of this part for the value of K that corresponds to the size of the test sample.

s=The sample standard deviation.