

Environmental Protection Agency

§ 89.304

credit calculations will be recalculated. Erroneous positive credits will be void except as provided in paragraph (h) of this section. Erroneous negative credit balances may be adjusted by EPA.

(h) If within 270 days of the end of the model year, EPA review determines a reporting error in the manufacturer's favor (that is, resulting in an increased credit balance) or if the manufacturer discovers such an error within 270 days of the end of the model year, the credits shall be restored for use by the manufacturer.

[59 FR 31335, June 17, 1994. Redesignated and amended at 63 FR 56995, 57009, Oct. 23, 1998]

§ 89.212 Notice of opportunity for hearing.

Any voiding of the certificate under §§ 89.203(d), 89.206(c), 89.209(c) or 89.210(g) will be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with §§ 89.512 and 89.513 and, if a manufacturer requests such a hearing, will be made only after an initial decision by the Presiding Officer.

[63 FR 57010, Oct. 23, 1998]

Subpart D—Emission Test Equipment Provisions

§ 89.301 Scope; applicability.

(a) This subpart describes the equipment required in order to perform exhaust emission tests on new nonroad compression-ignition engines subject to the provisions of subpart B of part 89.

(b) Exhaust gases, either raw or dilute, are sampled while the test engine is operated using an 8-mode test cycle on an engine dynamometer. The exhaust gases receive specific component analysis determining concentration of pollutant, exhaust volume, the fuel flow, and the power output during each mode. Emission is reported as grams per kilowatt hour (g/kw-hr). See subpart E of this part for a complete description of the test procedure.

(c) General equipment and calibration requirements are given in § 89.304 through 89.324. Sections 89.325 through

89.331 set forth general test specifications.

(d) Additional information about system design, calibration methodologies, and so forth, for raw gas sampling can be found in 40 CFR part 1065. Examples for system design, calibration methodologies, and so forth, for dilute exhaust gas sampling can be found in 40 CFR part 1065.

[59 FR 31335, June 17, 1994. Redesignated at 63 FR 56995, Oct. 23, 1998, as amended at 70 FR 40445, July 13, 2005]

§ 89.302 Definitions.

The definitions in subpart A of this part apply to this subpart. For terms not defined in this part, the definitions in 40 CFR part 86, subparts A, D, I, and N, apply to this subpart.

[63 FR 57010, Oct. 23, 1998]

§ 89.303 Symbols/abbreviations.

(a) The abbreviations in § 86.094-3 or part 89.3 of this chapter apply to this subpart.

(b) The abbreviations in Table 1 in appendix A of this subpart apply to this subpart. Some abbreviations from § 89.3 have been included for the convenience of the reader.

(c) The symbols in Table 2 in appendix A of this subpart apply to this subpart.

[59 FR 31335, June 17, 1994. Redesignated at 63 FR 56995, Oct. 23, 1998]

§ 89.304 Equipment required for gaseous emissions; overview.

(a) All engines subject to this subpart are tested for exhaust emissions. Engines are operated on dynamometers meeting the specification given in § 89.306.

(b) The exhaust is tested for gaseous emissions using a raw gas sampling system as described in § 89.412 or a constant volume sampling (CVS) system as described in § 89.419. Both systems require analyzers (see paragraph (c) of this section) specific to the pollutant being measured.

(c) Analyzers used are a non-dispersive infrared (NDIR) absorption type for carbon monoxide and carbon dioxide analysis; a heated flame ionization (HFID) type for hydrocarbon analysis; and a chemiluminescent detector

§ 89.305

(CLD) or heated chemiluminescent detector (HCLD) for oxides of nitrogen analysis. Sections 89.309 through 89.324 set forth a full description of analyzer requirements and specifications.

[59 FR 31335, June 17, 1994. Redesignated and amended at 63 FR 56995, 57010, Oct. 23, 1998]

§ 89.305 Equipment measurement accuracy/calibration frequency.

The accuracy of measurements must be such that the maximum tolerances shown in Table 3 in appendix A of this subpart are not exceeded. Calibrate all equipment and analyzers according to the frequencies shown in Table 3 in appendix A of this subpart.

[59 FR 31335, June 17, 1994. Redesignated at 63 FR 56995, Oct. 23, 1998]

§ 89.306 Dynamometer specifications and calibration weights.

(a) *Dynamometer specifications.* The dynamometer test stand and other instruments for measurement of power output must meet the accuracy and calibration frequency requirements shown in Table 3 in appendix A of this subpart. The dynamometer must be capable of performing the test cycle described in § 89.410.

(b) *Dynamometer calibration weights.* A minimum of six calibration weights for each range used are required. The weights must be spaced to reflect good engineering judgement such that they cover the range of weights required and must be traceable to within 0.5 percent of NIST weights. Laboratories located in foreign countries may certify calibration weights to local government bureau standards.

[59 FR 31335, June 17, 1994. Redesignated at 63 FR 56995, Oct. 23, 1998]

§ 89.307 Dynamometer calibration.

(a) If necessary, follow the dynamometer manufacturer's instructions for initial start-up and basic operating adjustments.

(b) Check the dynamometer torque measurement for each range used by the following method:

(1) Warm up the dynamometer following the dynamometer manufacturer's specifications.

(2) Determine the dynamometer calibration moment arm (a distance/weight

40 CFR Ch. I (7-1-07 Edition)

measurement). Dynamometer manufacturer's data, actual measurement, or the value recorded from the previous calibration used for this subpart may be used.

(3) When calibrating the engine flywheel torque transducer, any lever arm used to convert a weight or a force through a distance into a torque must be in a horizontal position (± 5 degrees).

(4) Calculate the indicated torque (IT) for each calibration weight to be used by:

IT = calibration weight (N) \times calibration moment arm (m)

(5) Attach each calibration weight specified in § 89.306 to the moment arm at the calibration distance determined in paragraph (b)(2) of this section. Record the power measurement equipment response (N-m) to each weight.

(6) For each calibration weight, compare the torque value measured in paragraph (b)(5) of this section to the calculated torque determined in paragraph (b)(4) of this section.

(7) The measured torque must be within either 2 percent of point or 1 percent of the engine maximum torque of the calculated torque.

(8) If the measured torque is not within the above requirements, adjust or repair the system. Repeat steps in paragraphs (b)(1) through (b)(6) of this section with the adjusted or repaired system.

(c) Optional. A master load-cell or transfer standard may be used to verify the torque measurement system.

(1) The master load-cell and read out system must be calibrated with weights at each test weight specified in § 89.306. The calibration weights must be traceable to within 0.1 percent of applicable national standards.

(2) Warm up the dynamometer following the equipment manufacturer's specifications.

(3) Attach the master load-cell and loading system.

(4) Load the dynamometer to a minimum of 6 equally spaced torque values as indicated by the master load-cell for each in-use range used.

(5) The in-use torque measurement must be within 2 percent of the torque measured by the master system for each load used.