

## §210.27

the following calibration procedures shall be used:

(1)(i) The sound level measurement system including the microphone shall be calibrated and appropriately adjusted at one or more nominal frequencies in the range from 250 through 1000 Hz at the beginning of each series of measurements, at intervals not exceeding 1 (one) hour during continual use, and immediately following a measurement indicating a violation.

(ii) The sound level measurement system shall be checked not less than once each year by its manufacturer, a representative of its manufacturer, or a person of equivalent special competence to verify that its accuracy meets the manufacturer's design criteria.

(2) An acoustical calibrator of the microphone coupler type designed for the sound level measurement system in use shall be used to calibrate the sound level measurement system in accordance with paragraph (b)(1)(i) of this section. The calibration must meet or exceed the accuracy requirements specified in section 5.4.1 of the American National Standard Institute Standards, "Method for Measurement of Sound Pressure Levels," (ANSI S1.13-1971) for field method measurements.

(c) Acoustical environment, weather conditions, and background noise requirements are prescribed in §201.23 of the Standards. In addition, a measurement tolerance of 2 dB(A) for a given measurement will be allowed to take into account the effects of the factors listed below and the interpretations of these effects by enforcement personnel:

(1) The common practice of reporting field sound level measurements to the nearest whole decibel;

(2) Variations resulting from commercial instrument tolerances;

(3) Variations resulting from the topography of the noise measurement site;

(4) Variations resulting from atmospheric conditions such as wind, ambient temperature, and atmospheric pressure; and

(5) Variations resulting from reflected sound from small objects allowed within the test site.

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### §210.27 New locomotive certification.

(a) A railroad shall not operate a locomotive built after December 31, 1979, unless the locomotive has been certified to be in compliance with the Standards.

(b) The certification prescribed in this section shall be determined for each locomotive model, by either—

(1) Load cell testing in accordance with the criteria prescribed in the Standards; or

(2) Passby testing in accordance with the criteria prescribed in the Standards.

(c) If passby testing is used under paragraph (b)(2) of this section, it shall be conducted with the locomotive operating at maximum rated horsepower output.

(d) Each new locomotive certified under this section shall be identified by a permanent badge or tag attached in the cab of the locomotive near the location of the inspection Form F 6180.49. The badge or tag shall state:

(1) Whether a load cell or passby test was used;

(2) The date and location of the test; and

(3) The A-weighted sound level reading in decibels obtained during the passby test, or the readings obtained at idle throttle setting and maximum throttle setting during a load cell test.

### §210.29 Operation standards (moving locomotives and rail cars).

The operation standards for the noise emission levels of moving locomotives, rail cars, or consists of locomotives and rail cars are prescribed in the Standards and duplicated in appendix A of this part.

(a) Measurements for compliance shall be made in compliance with the provisions of subpart C of the Standards and the following:

(1) Consists of locomotives containing at least one locomotive unit manufactured prior to December 31, 1979, shall be evaluated for compliance in accordance with §201.12(a) of the Standards, unless a locomotive within the consist is separated by at least 10 rail car lengths or 500 feet from other locomotives in the consist, in which case such separated locomotives may

be evaluated for compliance according to their respective built dates.

(2) Consists of locomotives composed entirely of locomotive units manufactured after December 31, 1979, shall be evaluated for compliance in accordance with §201.12(b) of the Standards.

(3) If the inspector cannot establish the built dates of all locomotives in a consist of locomotives measured under moving conditions, evaluation for compliance shall be made in accordance with §201.12(a) of the Standards.

(b) Noise emission standards for rail cars operating under moving conditions are contained in §201.13 of the Standards and are stated in appendix A of this part. If speed measurement equipment used by the inspector at the time of the measurement is not operating within an accuracy of 5 miles per hour, evaluation for compliance shall be made in accordance with §201.13(2) of the Standards.

(c) Locomotives and rail cars tested pursuant to the procedures prescribed in this part and in the Standards shall be considered in noncompliance whenever the test measurement, minus the appropriate tolerance (§210.25), exceeds the noise emission levels prescribed in appendix A of this part.

**§210.31 Operation standards (stationary locomotives at 30 meters).**

(a) For stationary locomotives at load cells:

(1) Each noise emission test shall begin after the engine of the locomotive has attained the normal cooling water operating temperature as prescribed by the locomotive manufacturer.

(2) Noise emission testing in idle or maximum throttle setting shall start after a 40 second stabilization period in the throttle setting selected for the test.

(3) After the stabilization period as prescribed in paragraph (a)(2) of this section, the A-weighted sound level reading in decibels shall be observed for an additional 30-second period in the throttle setting selected for the test.

(4) The maximum A-weighted sound level reading in decibels that is observed during the 30-second period of time prescribed in paragraph (a)(3) of

this section shall be used for test measurement purposes.

(b) The following data determined by any locomotive noise emission test conducted after December 31, 1976, shall be recorded in the "Remarks" section on the reverse side of Form F 6180.49:

(1) Location of test;

(2) Type of test;

(3) Date of test; and

(4) The A-weighted sound level reading in decibels obtained during the passby test, or the readings obtained at idle throttle setting and maximum throttle setting during a load cell test.

(c) Any locomotive subject to this part that is found not to be in compliance with the Standards as a result of a passby test shall be subjected to a load cell test or another passby test prior to return to service, except that no such retest shall be required if the cause of the noise defect is readily apparent and is corrected by the replacement of defective components or by a normal maintenance or repair procedure.

(d) The last entry recorded on Form F 6180.49 as required in paragraph (b) of this section shall be transcribed to a new Form FRA F 6180.49 when it is posted in the locomotive cab.

(e) Locomotives tested pursuant to the procedures prescribed in this part and in the Standards shall be considered in noncompliance wherever the test measurement, minus the appropriate tolerance (§210.25), exceeds the noise emission levels prescribed in appendix A of this part.

**§210.33 Operation standards (switcher locomotives, load cell test stands, car coupling operations, and retarders).**

(a) Measurement on receiving property of the noise emission levels from switcher locomotives, load cell test stands, car coupling operations, and retarders shall be performed in accordance with the requirements of 40 CFR part 201 and §210.25 of this part.

(b) These sources shall be considered in noncompliance whenever the test measurement, minus the appropriate tolerance (§210.25), exceeds the noise emission levels prescribed in appendix A of this part.