97.5 percent confidence level for a one-tailed t-test.

Step 7. Compare the mean of the first sample ($\bar{X}_1$) with the lower control limit (LCL_1) to determine one of the following:

(i) If the mean of the first sample is below the lower control limit, then the basic model is in non-compliance and testing is at an end.

(ii) If the mean is equal to or greater than the lower control limit, no final determination of compliance or non-compliance can be made; proceed to Step 8.

Step 8. Determine the recommended sample size (n) by using equation 6 as follows:

$$n = \left[\frac{tS_1(108 - 0.08RE)}{RE(8 - 0.08RE)}\right]^2 \qquad (6)$$

where S_1 and t have the values used in Steps 3 and 6, respectively. The factor

$$\frac{108 - 0.08RE}{RE(8 - 0.08RE)}$$

is based on an 8-percent tolerance in the total power loss.

Given the value of n, determine one of the following:

(i) If the value of n is less than or equal to n_1 and if the mean energy efficiency of the first sample ($\bar{X}_1$) is equal to or greater than the lower control limit (LCL_1), the basic model is in compliance and testing is at an end.

(ii) If the value of n is greater than n_1, and no additional units are available for testing, testing is at an end and the basic model is in non-compliance. If the value of n is greater than n_1, and additional units are available for testing, select a second sample n_2. The size of the n_2 sample is determined to be the smallest integer equal to or greater than the difference $n–n_1$. If the value of n_2 so calculated is greater than $20–n_1$, set n_2 equal to $20–n_1$.

Step 9. After testing the n_2 sample, compute the combined mean ($\bar{X}_2$) of the measured energy performance of the n_1 and n_2 tests of the combined first and second samples by using equation 7 as follows:

$$\bar{X}_2 = \frac{1}{n_1 + n_2}\sum_{i=1}^{n_1+n_2} X_i \qquad (7)$$

Step 10. Compute the standard error ($SE(\bar{X}_2)$) of the mean efficiency of the n_1 and n_2 tests in the combined first and second samples by using equation 8 as follows:

$$SE(\bar{X}_2) = \frac{S_1}{\sqrt{n_1 + n_2}} \qquad (8)$$

(Note that S_1 is the value obtained above in Step 3.)

Step 11. Set the lower control limit (LCL_2) to,

$$LCL_2 = SSD(m_1) - tSE(\bar{X}_2) \qquad (9)$$

where t has the value obtained in Step 5 and $SSD(m_1)$ is sample size discount from Step 5. Compare the combined sample mean ($\bar{X}_2$) to the lower control limit (LCL_2) to find one of the following:

(i) If the mean of the combined sample ($\bar{X}_2$) is less than the lower control limit (LCL_2), the basic model is in non-compliance and testing is at an end.

(ii) If the mean of the combined sample ($\bar{X}_2$) is equal to or greater than the lower control limit (LCL_2), the basic model is in compliance and testing is at an end.

MANUFACTURER-OPTION TESTING

If a determination of non-compliance is made in Steps 6, 7 or 11, above, the manufacturer may request that additional testing be conducted, in accordance with the following procedures.

Step A. The manufacturer requests that an additional number, n_3, of units be tested, with n_3 chosen such that $n_1+n_2+n_3$ does not exceed 20.

Step B. Compute the mean efficiency, standard error, and lower control limit of the new combined sample in accordance with the procedures prescribed in Steps 8, 9, and 10, above.

Step C. Compare the mean performance of the new combined sample to the lower control limit (LCL_2) to determine one of the following:

(a) If the new combined sample mean is equal to or greater than the lower control limit, the basic model is in compliance and testing is at an end.

(b) If the new combined sample mean is less than the lower control limit and the value of $n_1+n_2+n_3$ is less than 20, the manufacturer may request that additional units be tested. The total of all units tested may not exceed 20. Steps A, B, and C are then repeated.

(c) Otherwise, the basic model is determined to be in non-compliance.

[71 FR 24999, Apr. 27, 2006]

Subpart L—Illuminated Exit Signs

SOURCE: 70 FR 60417, Oct. 18, 2005, unless otherwise noted.

§ 431.201 Purpose and scope.

This subpart contains energy conservation requirements for illuminated exit signs, pursuant to Part B of Title III of the Energy Policy and Conservation Act, as amended, 42 U.S.C. 6291–6309.

§ 431.202 Definitions concerning illuminated exit signs.

Basic model means, with respect to illuminated exit signs, all units of a given type of illuminated exit sign (or class thereof) manufactured by one manufacturer and which have the same primary energy source, which have electrical characteristics that are essentially identical, and which do not have any differing electrical, physical, or functional characteristics that affect energy consumption.

Face means an illuminated side of an illuminated exit sign.

Illuminated exit sign means a sign that—

(1) Is designed to be permanently fixed in place to identify an exit; and

(2) Consists of an electrically powered integral light source that—

(i) Illuminates the legend "EXIT" and any directional indicators; and

(ii) Provides contrast between the legend, any directional indicators, and the background.

Input power demand means the amount of power required to continuously illuminate an exit sign model, measured in watts (W). For exit sign models with rechargeable batteries, input power demand shall be measured with batteries at full charge.

[70 FR 60417, Oct. 18, 2005, as amended at 71 FR 71372, Dec. 8, 2006]

TEST PROCEDURES

§ 431.203 Materials incorporated by reference.

(a) *General.* The Department incorporates by reference the following test procedures into subpart L of part 431. The Director of the Federal Register has approved the material listed in paragraph (b) of this section for incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Any subsequent amendment to this material by the standard-setting organization will not affect the DOE test procedures unless and until DOE amends its test procedures. The Department incorporates the material as it exists on the date of the approval by the Federal Register and a notice of any change in the material will be published in the FEDERAL REGISTER.

(b) *Test procedure incorporated by reference.* Environmental Protection Agency "ENERGY STAR Program Requirements for Exit Signs," Version 2.0 issued January 1, 1999.

(c) *Availability of reference*—(1) *Inspection of test procedure.* The test procedure incorporated by reference are available for inspection at:

(i) National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741–6030, or go to: *http://www.archives.gov/federal__register/code__of__federal__regulations/ibr__locations.html.*

(ii) U.S. Department of Energy, Forrestal Building, Room 1J–018 (Resource Room of the Building Technologies Program), 1000 Independence Avenue, SW., Washington, DC 20585–0121, (202) 586–9127, between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

(2) *Obtaining copies of the standard.* Copies of the Environmental Protection Agency "ENERGY STAR Program Requirements for Exit Signs," Version 2.0, may be obtained from the Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, (202) 272–0167 or at*http://www.epa.gov.*

[71 FR 71373, Dec. 8, 2006]

§ 431.204 Uniform test method for the measurement of energy consumption of illuminated exit signs.

(a) *Scope.* This section provides the test procedure for measuring, pursuant to EPCA, the input power demand of illuminated exit signs. For purposes of this part 431 and EPCA, the test procedure for measuring the input power demand of illuminated exit signs shall be the test procedure specified in § 431.203(b).

(b) *Testing and Calculations.* Determine the energy efficiency of each covered product by conducting the test

procedure, set forth in the Environmental Protection Agency's "ENERGY STAR Program Requirements for Exit Signs," Version 2.0, section 4 (Test Criteria), "Conditions for testing" and "Input power measurement." (Incorporated by reference, see § 431.203)

[71 FR 71373, Dec. 8, 2006]

§ 431.205 Units to be tested.

For each basic model of illuminated exit sign selected for testing, a sample of sufficient size shall be selected at random and tested to ensure that—

(a) Any represented value of estimated input power demand or other measure of energy consumption of a basic model for which consumers would favor lower values shall be no less than the higher of:

(1) The mean of the sample, or

(2) The upper 95 percent confidence limit of the true mean divided by 1.10; and

(b) Any represented value of the energy efficiency or other measure of energy consumption of a basic model for which consumers would favor higher values shall be no greater than the lower of:

(1) The mean of the sample, or

(2) The lower 95 percent confidence limit of the true mean divided by 0.90.

(Components of similar design may be substituted without requiring additional testing if the represented measures of energy continue to satisfy the applicable sampling provision.)

[75 FR 669, Jan. 5, 2010]

ENERGY CONSERVATION STANDARDS

§ 431.206 Energy conservation standards and their effective dates.

An illuminated exit sign manufactured on or after January 1, 2006, shall have an input power demand of 5 watts or less per face.

Subpart M—Traffic Signal Modules and Pedestrian Modules

SOURCE: 70 FR 60417, Oct. 18, 2005, unless otherwise noted.

§ 431.221 Purpose and scope.

This subpart contains energy conservation requirements for traffic signal modules and pedestrian modules, pursuant to Part B of Title III of the Energy Policy and Conservation Act, as amended, 42 U.S.C. 6291–6309.

§ 431.222 Definitions concerning traffic signal modules and pedestrian modules.

Basic model means, with respect to traffic signal modules and pedestrian modules, all units of a given type of traffic signal module or pedestrian module (or class thereof) manufactured by one manufacturer and which have the same primary energy source, which have electrical characteristics that are essentially identical, and which do not have any differing electrical, physical, or functional characteristics that affect energy consumption.

Maximum wattage means the power consumed by the module after being operated for 60 minutes while mounted in a temperature testing chamber so that the lensed portion of the module is outside the chamber, all portions of the module behind the lens are within the chamber at a temperature of 74 °C and the air temperature in front of the lens is maintained at a minimum of 49 °C.

Nominal wattage means the power consumed by the module when it is operated within a chamber at a temperature of 25 °C after the signal has been operated for 60 minutes.

Pedestrian module means a light signal used to convey movement information to pedestrians.

Traffic signal module means a standard 8-inch (200 mm) or 12-inch (300 mm) traffic signal indication that—

(1) Consists of a light source, a lens, and all other parts necessary for operation; and

(2) Communicates movement messages to drivers through red, amber, and green colors.

[70 FR 60417, Oct. 18, 2005, as amended at 71 FR 71373, Dec. 8, 2006]

TEST PROCEDURES

§ 431.223 Materials incorporated by reference.

(a) *General.* The Department incorporates by reference the following test procedures into subpart M of part 431. The Director of the Federal Register