the Federal Register as it was posted pursuant to paragraph (c)(1) of this section.

(2) If the Secretary receives no properly filed requests after posting a rule and identifies no Errors on the Secretary's own initiative, the Secretary will in due course submit the rule, as it was posted pursuant to paragraph (c)(1) of this section, to the Office of the Federal Register for publication. This will occur after the period prescribed by paragraph (c)(2) of this section has elapsed.

(3) If the Secretary receives a properly filed request after posting a rule pursuant to (c)(1) and determines that a correction is necessary, the Secretary will, absent extenuating circumstances, submit a corrected rule for publication in the FEDERAL REGISTER within 30 days after the period prescribed by paragraph (c)(2) of this section has elapsed.

(4) Consistent with the Act, compliance with an energy conservation standard will be required upon the specified compliance date as published in the relevant rule in the FEDERAL REGISTER.

(5) Consistent with the Administrative Procedure Act, and other applicable law, the Secretary will ordinarily designate an effective date for a rule under this section that is no less than 30 days after the publication of the rule in the FEDERAL REGISTER.

(6) When the Secretary submits a rule for publication, the Secretary will make publicly available a written statement indicating how any properly filed requests for correction were handled.

(g) *Alteration of standards.* Until an energy conservation standard has been published in the FEDERAL REGISTER, the Secretary may correct such standard, consistent with the Administrative Procedure Act.

(h) *Judicial review.* For determining the prematurity, timeliness, or lateness of a petition for judicial review pursuant to section 336(b) of the Act (42 U.S.C. 6306), a rule is considered ''prescribed'' on the date when the rule is published in the FEDERAL REGISTER.

[81 FR 57757, Aug. 24, 2016]

Subpart B—Test Procedures

§ 430.21 Purpose and scope.

This subpart contains test procedures required to be prescribed by DOE pursuant to section 323 of the Act.

§ 430.23 Test procedures for the measurement of energy and water consumption.

When the test procedures of this section call for rounding off of test results, and the results fall equally between two values of the nearest dollar, kilowatt-hour, or other specified nearest value, the result shall be rounded up to the nearest higher value.

(a) *Refrigerators and refrigerator-freezers.* (1) The estimated annual operating cost for models without an anti-sweat heater switch shall be the product of the following three factors, with the resulting product then being rounded to the nearest dollar per year:

(i) The representative average-use cycle of 365 cycles per year;

(ii) The average per-cycle energy consumption for the standard cycle in kilowatt-hours per cycle, determined according to appendix A of this subpart; and

(iii) The representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary.

(2) The estimated annual operating cost for models with an anti-sweat heater switch shall be the product of the following three factors, with the resulting product then being rounded to the nearest dollar per year:

(i) The representative average-use cycle of 365 cycles per year;

(ii) Half the sum of the average per-cycle energy consumption for the standard cycle and the average per-cycle energy consumption for a test cycle type with the anti-sweat heater switch in the position set at the factory just before shipping, each in kilowatt-hours per cycle, determined according to appendix A of this subpart; and

(iii) The representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary.

(3) The estimated annual operating cost for any other specified cycle type

shall be the product of the following three factors, the resulting product then being rounded to the nearest dollar per year:

(i) The representative average-use cycle of 365 cycles per year;

(ii) The average per-cycle energy consumption for the specified cycle type, determined according to appendix A of this subpart; and

(iii) The representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary.

(4) The energy factor, expressed in cubic feet per kilowatt-hour per cycle, shall be:

(i) For models without an anti-sweat heater switch, the quotient of:

(A) The adjusted total volume in cubic feet, determined according to appendix A of this subpart, divided by—

(B) The average per-cycle energy consumption for the standard cycle in kilowatt-hours per cycle, determined according to appendix A of this subpart, the resulting quotient then being rounded to the second decimal place; and

(ii) For models having an anti-sweat heater switch, the quotient of:

(A) The adjusted total volume in cubic feet, determined according to appendix A of this subpart, divided by—

(B) Half the sum of the average per-cycle energy consumption for the standard cycle and the average per-cycle energy consumption for a test cycle type with the anti-sweat heater switch in the position set at the factory just before shipping, each in kilowatt-hours per cycle, determined according to appendix A of this subpart, the resulting quotient then being rounded to the second decimal place.

(5) The annual energy use, expressed in kilowatt-hours per year and rounded to the nearest kilowatt-hour per year, shall be determined according to appendix A of this subpart.

(6) Other useful measures of energy consumption shall be those measures of energy consumption that the Secretary determines are likely to assist consumers in making purchasing decisions which are derived from the application of appendix A of this subpart.

(7) The following principles of interpretation shall be applied to the test procedure. The intent of the energy test procedure is to simulate typical room conditions (72 °F (22.2 °C)) with door openings, by testing at 90 °F (32.2 °C) without door openings. Except for operating characteristics that are affected by ambient temperature (for example, compressor percent run time), the unit, when tested under this test procedure, shall operate in a manner equivalent to the unit's operation while in typical room conditions.

(i) The energy used by the unit shall be calculated when a calculation is provided by the test procedure. Energy consuming components that operate in typical room conditions (including as a result of door openings, or a function of humidity), and that are not excluded by this test procedure, shall operate in an equivalent manner during energy testing under this test procedure, or be accounted for by all calculations as provided for in the test procedure. Examples:

(A) Energy saving features that are designed to operate when there are no door openings for long periods of time shall not be functional during the energy test.

(B) The defrost heater shall neither function nor turn off differently during the energy test than it would when in typical room conditions. Also, the product shall not recover differently during the defrost recovery period than it would in typical room conditions.

(C) Electric heaters that would normally operate at typical room conditions with door openings shall also operate during the energy test.

(D) Energy used during adaptive defrost shall continue to be measured and adjusted per the calculation provided in this test procedure.

(ii) DOE recognizes that there may be situations that the test procedures do not completely address. In such cases, a manufacturer must obtain a waiver in accordance with the relevant provisions of 10 CFR part 430 if:

(A) A product contains energy consuming components that operate differently during the prescribed testing than they would during representative average consumer use; and

(B) Applying the prescribed test to that product would evaluate it in a manner that is unrepresentative of its

true energy consumption (thereby providing materially inaccurate comparative data).

(b) *Freezers.* (1) The estimated annual operating cost for freezers without an anti-sweat heater switch shall be the product of the following three factors, with the resulting product then being rounded to the nearest dollar per year:

(i) The representative average-use cycle of 365 cycles per year;

(ii) The average per-cycle energy consumption for the standard cycle in kilowatt-hours per cycle, determined according to appendix B of this subpart; and

(iii) The representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary.

(2) The estimated annual operating cost for freezers with an anti-sweat heater switch shall be the product of the following three factors, with the resulting product then being rounded to the nearest dollar per year:

(i) The representative average-use cycle of 365 cycles per year;

(ii) Half the sum of the average per-cycle energy consumption for the standard cycle and the average per-cycle energy consumption for a test cycle type with the anti-sweat heater switch in the position set at the factory just before shipping, each in kilowatt-hours per cycle, determined according to appendix B of this subpart; and

(iii) The representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary.

(3) The estimated annual operating cost for any other specified cycle type for freezers shall be the product of the following three factors, with the resulting product then being rounded to the nearest dollar per year:

(i) The representative average-use cycle of 365 cycles per year;

(ii) The average per-cycle energy consumption for the specified cycle type, determined according to appendix B of this subpart; and

(iii) The representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary.

(4) The energy factor, expressed in cubic feet per kilowatt-hour per cycle, shall be:

(i) For models without an anti-sweat heater switch, the quotient of:

(A) The adjusted total volume in cubic feet, determined according to appendix B of this subpart, divided by—

(B) The average per-cycle energy consumption for the standard cycle in kilowatt-hours per cycle, determined according to appendix B of this subpart, the resulting quotient then being rounded to the second decimal place; and

(ii) For models having an anti-sweat heater switch, the quotient of:

(A) The adjusted total volume in cubic feet, determined according to appendix B of this subpart, divided by—

(B) Half the sum of the average per-cycle energy consumption for the standard cycle and the average per-cycle energy consumption for a test cycle type with the anti-sweat heater switch in the position set at the factory just before shipping, each in kilowatt-hours per cycle, determined according to appendix B of this subpart, the resulting quotient then being rounded to the second decimal place.

(5) The annual energy use, expressed in kilowatt-hours per year and rounded to the nearest kilowatt-hour per year, shall be determined according to appendix B of this subpart.

(6) Other useful measures of energy consumption for freezers shall be those measures the Secretary determines are likely to assist consumers in making purchasing decisions and are derived from the application of appendix B of this subpart.

(7) The following principles of interpretation shall be applied to the test procedure. The intent of the energy test procedure is to simulate typical room conditions (72 °F (22.2 °C)) with door openings by testing at 90 °F (32.2 °C) without door openings. Except for operating characteristics that are affected by ambient temperature (for example, compressor percent run time), the unit, when tested under this test procedure, shall operate in a manner equivalent to the unit's operation while in typical room conditions.

(i) The energy used by the unit shall be calculated when a calculation is

provided by the test procedure. Energy consuming components that operate in typical room conditions (including as a result of door openings, or a function of humidity), and that are not excluded by this test procedure, shall operate in an equivalent manner during energy testing under this test procedure, or be accounted for by all calculations as provided for in the test procedure. Examples:

(A) Energy saving features that are designed to operate when there are no door openings for long periods of time shall not be functional during the energy test.

(B) The defrost heater shall neither function nor turn off differently during the energy test than it would when in typical room conditions. Also, the product shall not recover differently during the defrost recovery period than it would in typical room conditions.

(C) Electric heaters that would normally operate at typical room conditions with door openings shall also operate during the energy test.

(D) Energy used during adaptive defrost shall continue to be measured and adjusted per the calculation provided for in this test procedure.

(ii) DOE recognizes that there may be situations that the test procedures do not completely address. In such cases, a manufacturer must obtain a waiver in accordance with the relevant provisions of this part if:

(A) A product contains energy consuming components that operate differently during the prescribed testing than they would during representative average consumer use; and

(B) Applying the prescribed test to that product would evaluate it in a manner that is unrepresentative of its true energy consumption (thereby providing materially inaccurate comparative data).

(c) *Dishwashers.* (1) The Estimated Annual Operating Cost (EAOC) for dishwashers must be rounded to the nearest dollar per year and is defined as follows:

(i) When cold water (50 °F) is used,

(A) For dishwashers having a truncated normal cycle as defined in section 1.22 of appendix C1 to this subpart, $EAOC = (D_e \times E_{TLP}) + (D_e \times N \times (M + M_{WS} + E_F - (E_D/2)))$.

(B) For dishwashers not having a truncated normal cycle, $EAOC = (D_e \times E_{TLP}) + (D_e \times N \times (M + M_{WS} + E_F))$.

Where,

D_e = the representative average unit cost of electrical energy, in dollars per kilowatt-hour, as provided by the Secretary,

E_{TLP} = the annual combined low-power mode energy consumption in kilowatt-hours per year and determined according to section 5.7 of appendix C1 to this subpart,

N = the representative average dishwasher use of 215 cycles per year,

M = the machine energy consumption per cycle for the normal cycle, as defined in section 1.12 of appendix C1 to this subpart, in kilowatt-hours and determined according to section 5.1.1 of appendix C1 to this subpart for non-soil-sensing dishwashers and section 5.1.2 of appendix C1 to this subpart for soil-sensing dishwashers,

M_{WS} = the machine energy consumption per cycle for water softener regeneration, in kilowatt-hours and determined according to section 5.1.3 of appendix C1 to this subpart,

E_F = the fan-only mode energy consumption per cycle, in kilowatt-hours and determined according to section 5.2 of appendix C1 to this subpart, and

E_D = the drying energy consumption, in kilowatt-hours and defined as energy consumed using the power-dry feature after the termination of the last rinse option of the normal cycle; determined according to section 5.3 of appendix C1 to this subpart.

(ii) When electrically-heated water (120 °F or 140 °F) is used,

(A) For dishwashers having a truncated normal cycle as defined in section 1.22 of appendix C1 to this subpart, $EAOC = (D_e \times E_{TLP}) + (D_e \times N \times (M + M_{WS} + E_F - (E_D/2))) + (D_e \times N \times (W + W_{WS}))$.

(B) For dishwashers not having a truncated normal cycle, $EAOC = (D_e \times E_{TLP}) + (D_e \times N \times (M + M_{WS} + E_F)) + (D_e \times N \times (W + W_{WS}))$.

Where,

D_e, E_{TLP}, N, M, M_{WS}, E_F, and E_D, are defined in paragraph (c)(1)(i) of this section,

W = the water energy consumption per cycle for the normal cycle, as defined in section 1.12 of appendix C1 to this subpart, in kilowatt-hours and determined according to section 5.5.1.1 of appendix C1 to this subpart for dishwashers that operate with a nominal 140 °F inlet water temperature and section 5.5.2.1 of appendix C1 to this subpart for dishwashers that operate with a nominal inlet water temperature of 120 °F, and

W_{WS} = the water softener regeneration water energy consumption per cycle in kilowatt-hours and determined according to section 5.5.1.2 of appendix C1 to this subpart for dishwashers that operate with a nominal 140 °F inlet water temperature and section 5.5.2.2 of appendix C1 to this subpart for dishwashers that operate with a nominal inlet water temperature of 120 °F.

(iii) When gas-heated or oil-heated water is used,

(A) For dishwashers having a truncated normal cycle as defined in section 1.22 of appendix C1 to this subpart, $EAOC_g = (D_e \times E_{TLP}) + (D_e \times N \times (M + M_{WS} + E_F - (E_D/2))) + (D_g \times N \times (W_g + W_{WSg}))$.

(B) For dishwashers not having a truncated normal cycle, $EAOC_g = (D_e \times E_{TLP}) + (D_e \times N \times (M + M_{WS} + E_F)) + (D_g \times N \times (W_g + W_{WSg}))$.

Where,

D_e, E_{TLP}, N, M, M_{WS}, E_F, and E_D are defined in paragraph (c)(1)(i) of this section,

D_g = the representative average unit cost of gas or oil, as appropriate, in dollars per Btu, as provided by the Secretary,

W_g = the water energy consumption per cycle for the normal cycle, as defined in section 1.12 of appendix C1 to this subpart, in Btus and determined according to section 5.6.1.1 of appendix C1 to this subpart for dishwashers that operate with a nominal 140 °F inlet water temperature and section 5.6.2.1 of appendix C1 to this subpart for dishwashers that operate with a nominal inlet water temperature of 120 °F, and

W_{WSg} = the water softener regeneration energy consumption per cycle in Btu per cycle and determined according to section 5.6.1.2 of appendix C1 to this subpart for dishwashers that operate with a nominal 140 °F inlet water temperature and section 5.6.2.2 of appendix C1 to this subpart for dishwashers that operate with a nominal inlet water temperature of 120 °F.

(2) The estimated annual energy use, EAEU, expressed in kilowatt-hours per year must be rounded to the nearest kilowatt-hour per year and is defined as follows:

(i) For dishwashers having a truncated normal cycle as defined in section 1.22 of appendix C1 to this subpart:

$EAEU = (M + M_{WS} + E_F - (E_D/2) + W + W_{WS}) \times N + (E_{TLP})$

Where,

M, M_{WS}, E_D, N, E_F, and E_{TLP} are defined in paragraph (c)(1)(i) of this section, and W and W_{WS} are defined in paragraph (c)(1)(ii) of this section.

(ii) For dishwashers not having a truncated normal cycle:

$EAEU = (M + M_{WS} + E_F + W + W_{WS}) \times N + E_{TLP}$

Where,

M, M_{WS}, N, E_F, and E_{TLP} are defined in paragraph (c)(1)(i) of this section, and W and W_{WS} are defined in paragraph (c)(1)(ii) of this section.

(3) The sum of the water consumption, V, and the water consumption during water softener regeneration, V_{WS}, expressed in gallons per cycle and defined in section 5.4 of appendix C1 to this subpart, must be rounded to one decimal place.

(4) Other useful measures of energy consumption for dishwashers are those which the Secretary determines are likely to assist consumers in making purchasing decisions and which are derived from the application of appendix C1 to this subpart.

(d) *Clothes dryers.* (1) The estimated annual energy consumption for clothes dryers, expressed in kilowatt-hours per year, shall be the product of the annual representative average number of clothes dryer cycles as specified in appendix D1 or D2 to this subpart, as appropriate, and the per-cycle combined total energy consumption in kilowatt-hours per cycle, determined according to section 4.6 of appendix D1 or section 4.6 of appendix D2 to this subpart, as appropriate.

(2) The estimated annual operating cost for clothes dryers shall be—

(i) For an electric clothes dryer, the product of the following three factors, with the resulting product then being rounded off to the nearest dollar per year:

(A) The annual representative average number of clothes dryer cycles as specified in appendix D1 or appendix D2 to this subpart, as appropriate;

(B) The per-cycle combined total energy consumption in kilowatt-hours per cycle, determined according to section 4.6 of appendix D1 or section 4.6 of appendix D2 to this subpart, as appropriate; and

(C) The representative average unit cost of electrical energy in dollars per

kilowatt-hour as provided by the Secretary; and

(ii) For a gas clothes dryer, the product of the annual representative average number of clothes dryer cycles as specified in appendix D1 or D2 to this subpart, as appropriate, times the sum of the following three factors, with the resulting product then being rounded off to the nearest dollar per year:

(A) The product of the per-cycle gas dryer electric energy consumption in kilowatt-hours per cycle, determined according to section 4.2 of appendix D1 or section 4.2 of appendix D2 to this subpart, as appropriate, times the representative average unit cost of electrical energy in dollars per kilowatt-hour as provided by the Secretary; plus,

(B) The product of the per-cycle gas dryer gas energy consumption, in Btus per cycle, determined according to section 4.3 of appendix D1 or section 4.3 of appendix D2 to this subpart, as appropriate, times the representative average unit cost for natural gas or propane, as appropriate, in dollars per Btu as provided by the Secretary; plus,

(C) The product of the per-cycle standby mode and off mode energy consumption in kilowatt-hours per cycle, determined according to section 4.5 of appendix D1 or section 4.5 of appendix D2 to this subpart, as appropriate, times the representative average unit cost of electrical energy in dollars per kilowatt-hour as provided by the Secretary.

(3) The combined energy factor, expressed in pounds per kilowatt-hour is determined in accordance with section 4.7 of appendix D1 or section 4.7 of appendix D2 to this subpart, as appropriate, the result then being rounded off to the nearest hundredth (0.01).

(4) Other useful measures of energy consumption for clothes dryers shall be those measures of energy consumption for clothes dryers which the Secretary determines are likely to assist consumers in making purchasing decisions and which are derived from the application of appendix D1 or D2 to this subpart, as appropriate.

(e) *Water heaters.* (1) The estimated annual operating cost is calculated as:

(i) For a gas-fired or oil-fired water heater, the sum of: The product of the annual gas or oil energy consumption, determined according to section 6.3.9 or 6.4.6 of appendix E of this subpart, times the representative average unit cost of gas or oil, as appropriate, in dollars per Btu as provided by the Secretary; plus the product of the annual electric energy consumption, determined according to section 6.3.8 or 6.4.5 of appendix E of this subpart, times the representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary. Round the resulting sum to the nearest dollar per year.

(ii) For an electric water heater, the product of the annual energy consumption, determined according to section 6.3.7 or 6.4.4 of appendix E of this subpart, times the representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary. Round the resulting product to the nearest dollar per year.

(2) For an individual unit, determine the tested uniform energy factor in accordance with section 6.3.6 or 6.4.3 of appendix E of this subpart, and round the value to the nearest 0.01.

(f) *Room air conditioners.* (1) Determine cooling capacity, expressed in British thermal units per hour (Btu/h), as follows:

(i) For a single-speed room air conditioner, determine the cooling capacity in accordance with section 4.1.2 of appendix F of this subpart.

(ii) For a variable-speed room air conditioner, determine the cooling capacity in accordance with section 4.1.2 of appendix F of this subpart for test condition 1 in Table 1 of appendix F of this subpart.

(2) Determine electrical power input, expressed in watts (W) as follows:

(i) For a single-speed room air conditioner, determine the electrical power input in accordance with section 4.1.2 of appendix F of this subpart.

(ii) For a variable-speed room air conditioner, determine the electrical power input in accordance with section 4.1.2 of appendix F of this subpart, for test condition 1 in Table 1 of appendix F of this subpart.

(3) Determine the combined energy efficiency ratio (CEER), expressed in British thermal units per watt-hour (Btu/Wh) and as follows:

(i) For a single-speed room air conditioner, determine the CEER in accordance with section 5.2.2 of appendix F of this subpart.

(ii) For a variable-speed room air conditioner, determine the CEER in accordance with section 5.3.11 of appendix F of this subpart.

(4) Determine the estimated annual operating cost for a room air conditioner, expressed in dollars per year, by multiplying the following two factors and rounding as directed:

(i) For single-speed room air conditioners, the sum of AEC_{cool} and $AEC_{ia/om}$, determined in accordance with section 5.2.1 and section 5.1, respectively, of appendix F of this subpart. For variable-speed room air conditioners, the sum of AEC_{wt} and $AEC_{ia/om}$, determined in accordance with section 5.3.4 and section 5.1, respectively, of appendix F of this subpart; and

(ii) A representative average unit cost of electrical energy in dollars per kilowatt-hour as provided by the Secretary. Round the resulting product to the nearest dollar per year.

(g) *Unvented home heating equipment.* (1) The estimated annual operating cost for primary electric heaters, shall be the product of:

(i) The average annual electric energy consumption in kilowatt-hours per year, determined according to section 3.1 of appendix G of this subpart and

(ii) the representative average unit cost in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act, the resulting product then being rounded off to the nearest dollar per year.

(2) The estimated regional annual operating cost for primary electric heaters, shall be the product of: (i) The regional annual electric energy consumption in kilowatt-hours per year for primary heaters determined according to section 3.2 of appendix G of this subpart and (ii) the representative average unit cost in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act, the resulting product then being rounded off to the nearest dollar per year.

(3) The estimated operating cost per million Btu output shall be—

(i) For primary and supplementary electric heaters and unvented gas and oil heaters without an auxiliary electric system, the product of:

(A) One million; and

(B) The representative unit cost in dollars per Btu for natural gas, propane, or oil, as provided pursuant to section 323(b)(2) of the Act as appropriate, or the quotient of the representative unit cost in dollars per kilowatt-hour, as provided pursuant to section 323(b)(2) of the Act, divided by 3,412 Btu per kilowatt hour, the resulting product then being rounded off to the nearest 0.01 dollar per million Btu output; and

(ii) For unvented gas and oil heaters with an auxiliary electric system, the product of: (A) The quotient of one million divided by the rated output in Btu's per hour as determined in 3.4 of appendix G of this subpart; and (B) the sum of: (*1*) The product of the maximum fuel input in Btu's per hour as determined in 2.2. of this appendix times the representative unit cost in dollars per Btu for natural gas, propane, or oil, as appropriate, as provided pursuant to section 323(b)(2) of the Act, plus (*2*) the product of the maximum auxiliary electric power in kilowatts as determined in 2.1 of appendix G of this subpart times the representative unit cost in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act, the resulting quantity shall be rounded off to the nearest 0.01 dollar per million Btu output.

(4) The rated output for unvented heaters is the rated output as determined according to either sections 3.3 or 3.4 of appendix G of this subpart, as appropriate, with the result being rounded to the nearest 100 Btu per hour.

(5) Other useful measures of energy consumption for unvented home heating equipment shall be those measures of energy consumption for unvented home heating equipment which the Secretary determines are likely to assist consumers in making purchasing decisions and which are derived from the application of appendix G of this subpart.

(h) *Television sets.* The power consumption of a television set, expressed in watts, including on mode, standby

mode, and off mode power consumption values, shall be measured in accordance with sections 7.1, 7.3, and 7.4 of appendix H of this subpart respectively. The annual energy consumption, expressed in kilowatt-hours per year, shall be measured in accordance with section 8 of appendix H of this subpart.

(i) *Cooking products.* (1) Determine the standby power for microwave ovens, excluding any microwave oven component of a combined cooking product, according to section 3.2.3 of appendix I to this subpart. Round standby power to the nearest 0.1 watt.

(2)(i) Determine the integrated annual energy consumption of a conventional electric cooking top, including any conventional cooking top component of a combined cooking product, according to section 4.3.1 of appendix I1 to this subpart. Round the result to the nearest 1 kilowatt-hour (kWh) per year.

(ii) Determine the integrated annual energy consumption of a conventional gas cooking top, including any conventional cooking top component of a combined cooking product, according to section 4.3.2 of appendix I1 to this subpart. Round the result to the nearest 1 kilo-British thermal unit (kBtu) per year.

(3) Determine the total annual gas energy consumption of a conventional gas cooking top, including any conventional cooking top component of a combined cooking product, according to section 4.1.2.2.1 of appendix I1 to this subpart. Round the result to the nearest 1 kBtu per year.

(4)(i) Determine the total annual electrical energy consumption of a conventional electric cooking top, including any conventional cooking top component of a combined cooking product, as the integrated annual energy consumption of the conventional electric cooking top, as determined in paragraph (i)(2)(i) of this section.

(ii) Determine the total annual electrical energy consumption of a conventional gas cooking top, including any conventional cooking top component of a combined cooking product, as follows, rounded to the nearest 1 kWh per year:

$E_{TGE} = E_{AGE} + E_{TLP}$

Where:

E_{AGE} is the conventional gas cooking top annual active mode electrical energy consumption as defined in section 4.1.2.2.2 of appendix I1 to this subpart, and E_{TLP} is the combined low-power mode energy consumption as defined in section 4.1 of appendix I1 to this subpart.

(5) Determine the estimated annual operating cost corresponding to the energy consumption of a conventional cooking top, including any conventional cooking top component of a combined cooking product, as follows, rounded to the nearest dollar per year:

$(E_{TGE} \times C_{KWH}) + (E_{TGG} \times C_{KBTU})$

Where:

E_{TGE} is the total annual electrical energy consumption for any electric energy usage, in kilowatt-hours (kWh) per year, as determined in accordance with paragraph (i)(4) of this section;

C_{KWH} is the representative average unit cost for electricity, in dollars per kWh, as provided pursuant to section 323(b)(2) of the Act;

E_{TGG} is the total annual gas energy consumption, in kBtu per year, as determined in accordance with paragraph (i)(3) of this section; and

C_{KBTU} is the representative average unit cost for natural gas or propane, in dollars per kBtu, as provided pursuant to section 323(b)(2) of the Act, for conventional gas cooking tops that operate with natural gas or with LP-gas, respectively.

(6) Other useful measures of energy consumption for conventional cooking tops shall be the measures of energy consumption that the Secretary determines are likely to assist consumers in making purchasing decisions and that are derived from the application of appendix I1 to this subpart.

(j) *Clothes washers.* (1) The estimated annual operating cost for automatic and semi-automatic clothes washers must be rounded off to the nearest dollar per year and is defined as follows:

(i) When using appendix J (see the note at the beginning of appendix J),

(A) When electrically heated water is used,

$(N \times (ME_T + HE_T + E_{TLP}) \times C_{KWH})$

Where:

N = the representative average residential clothes washer use of 234 cycles per year according to appendix J,

ME_T = the total weighted per-cycle machine electrical energy consumption, in kilowatt-hours per cycle, determined according to section 4.1.6 of appendix J,

HE_T = the total weighted per-cycle hot water energy consumption using an electrical water heater, in kilowatt-hours per cycle, determined according to section 4.1.3 of appendix J,

E_{TLP} = the per-cycle combined low-power mode energy consumption, in kilowatt-hours per cycle, determined according to section 4.6.2 of appendix J, and

C_{KWH} = the representative average unit cost, in dollars per kilowatt-hour, as provided by the Secretary.

(B) When gas-heated or oil-heated water is used,

$$(N \times (((ME_T + E_{TLP}) \times C_{KWH}) + (HE_{TG} \times C_{BTU})))$$

Where:

N, ME_T, E_{TLP}, and C_{KWH} are defined in paragraph (j)(1)(i)(A) of this section,

HE_{TG} = the total per-cycle hot water energy consumption using gas-heated or oil-heated water, in Btu per cycle, determined according to section 4.1.4 of appendix J, and

C_{BTU} = the representative average unit cost, in dollars per Btu for oil or gas, as appropriate, as provided by the Secretary.

(ii) When using appendix J2 (see the note at the beginning of appendix J2),

(A) When electrically heated water is used

$$(N_2 \times (E_{TE2} + E_{TLP2}) \times C_{KWH})$$

Where:

N_2 = the representative average residential clothes washer use of 295 cycles per year according to appendix J2,

E_{TE2} = the total per-cycle energy consumption when electrically heated water is used, in kilowatt-hours per cycle, determined according to section 4.1.7 of appendix J2,

E_{TLP2} = the per-cycle combined low-power mode energy consumption, in kilowatt-hours per cycle, determined according to section 4.4 of appendix J2, and

C_{KWH} = the representative average unit cost, in dollars per kilowatt-hour, as provided by the Secretary

(B) When gas-heated or oil-heated water is used,

$$(N_2 \times (((ME_{T2} + E_{TLP2}) \times C_{KWH}) + (HE_{TG2} \times C_{BTU})))$$

Where:

N_2, E_{TLP2}, and C_{KWH} are defined in paragraph (j)(1)(ii)(A) of this section,

ME_{T2} = the total weighted per-cycle machine electrical energy consumption, in kilowatt-hours per cycle, determined according to section 4.1.6 of appendix J2,

HE_{TG2} = the total per-cycle hot water energy consumption using gas-heated or oil-heated water, in Btu per cycle, determined according to section 4.1.4 of appendix J2, and

C_{BTU} = the representative average unit cost, in dollars per Btu for oil or gas, as appropriate, as provided by the Secretary.

(2)(i) The integrated modified energy factor for automatic and semi-automatic clothes washers is determined according to section 4.6 of appendix J2 (when using appendix J2). The result shall be rounded off to the nearest 0.01 cubic foot per kilowatt-hour per cycle.

(ii) The energy efficiency ratio for automatic and semi-automatic clothes washers is determined according to section 4.9 of appendix J (when using appendix J). The result shall be rounded to the nearest 0.01 pound per kilowatt-hour per cycle.

(3) The annual water consumption of a clothes washer must be determined as:

(i) When using appendix J, the product of the representative average-use of 234 cycles per year and the total weighted per-cycle water consumption in gallons per cycle determined according to section 4.2.4 of appendix J.

(ii) When using appendix J2, the product of the representative average-use of 295 cycles per year and the total weighted per-cycle water consumption for all wash cycles, in gallons per cycle, determined according to section 4.2.11 of appendix J2.

(4)(i) The integrated water factor must be determined according to section 4.2.12 of appendix J2, with the result rounded to the nearest 0.1 gallons per cycle per cubic foot.

(ii) The water efficiency ratio for automatic and semi-automatic clothes washers is determined according to section 4.7 of appendix J (when using appendix J). The result shall be rounded to the nearest 0.01 pound per gallon per cycle.

(5) Other useful measures of energy consumption for automatic or semi-automatic clothes washers shall be those measures of energy consumption

that the Secretary determines are likely to assist consumers in making purchasing decisions and that are derived from the application of appendix J or appendix J2, as appropriate.

(k)–(l) [Reserved]

(m) *Central air conditioners and heat pumps.* See the note at the beginning of appendix M and M1 to determine the appropriate test method. Determine all values discussed in this section using a single appendix.

(1) Determine cooling capacity from the steady-state wet-coil test (A or A_2 Test), as described in section 3.2 of appendix M or M1 to this subpart, and rounded off to the nearest

(i) To the nearest 50 Btu/h if cooling capacity is less than 20,000 Btu/h;

(ii) To the nearest 100 Btu/h if cooling capacity is greater than or equal to 20,000 Btu/h but less than 38,000 Btu/h; and

(iii) To the nearest 250 Btu/h if cooling capacity is greater than or equal to 38,000 Btu/h and less than 65,000 Btu/h.

(2) Determine seasonal energy efficiency ratio (SEER) as described in section 4.1 of appendix M to this subpart or seasonal energy efficiency ratio 2 (SEER2) as described in section 4.1 of appendix M1 to this subpart, and round off to the nearest 0.025 Btu/W-h.

(3) Determine energy efficiency ratio (EER) as described in section 4.6 of appendix M or M1 to this subpart, and round off to the nearest 0.025 Btu/W-h. The EER from the A or A_2 test, whichever applies, when tested in accordance with appendix M1 to this subpart, is referred to as EER2.

(4) Determine heating seasonal performance factors (HSPF) as described in section 4.2 of appendix M to this subpart or heating seasonal performance factors 2 (HSPF2) as described in section 4.2 of appendix M1 to this subpart, and round off to the nearest 0.025 Btu/W-h.

(5) Determine average off mode power consumption as described in section 4.3 of appendix M or M1 to this subpart, and round off to the nearest 0.5 W.

(6) Determine all other measures of energy efficiency or consumption or other useful measures of performance using appendix M or M1 of this subpart.

(n) *Furnaces.* (1) The estimated annual operating cost for furnaces is the sum of: (i) The product of the average annual fuel energy consumption, in Btu's per year for gas or oil furnaces or in kilowatt-hours per year for electric furnaces, determined according to section 10.2.2 or 10.3 of appendix N of this subpart, respectively, and the representative average unit cost in dollars per Btu for gas or oil, or dollars per kilowatt-hour for electric, as appropriate, as provided pursuant to section 323(b)(2) of the Act, plus (ii) the product of the average annual auxiliary electric energy consumption in kilowatt-hours per year determined according to section 10.2.3 of appendix N of this subpart, and the representative average unit cost in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act, the resulting sum then being rounded off to the nearest dollar per year. (For furnaces which operate with variable inputs, an estimated annual operating cost is to be calculated for each degree of oversizing specified in section 10 of appendix N of this subpart.)

(2) The annual fuel utilization efficiency for furnaces, expressed in percent, is the ratio of the annual fuel output of useful energy delivered to the heated space to the annual fuel energy input to the furnace determined according to section 10.1 of appendix N of this subpart for gas and oil furnaces and determined in accordance with section 11.1 of the American National Standards Institute/American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ANSI/ASHRAE) Standard 103–1993 (incorporated by reference, see § 430.3) for electric furnaces. Truncate the annual fuel utilization efficiency to one-tenth of a percentage point.

(3) The estimated regional annual operating cost for furnaces is the sum of: (i) The product of the regional annual fuel energy consumption in Btu's per year for gas or oil furnaces or in kilowatt-hours per year for electric furnaces, determined according to section 10.5.1 or 10.5.3 of appendix N of this subpart, respectively, and the representative average unit cost in dollars per Btu for gas or oil, or dollars per kilowatt-hour for electric, as appropriate, as provided pursuant to section

323(b)(2) of the Act, plus (ii) the product of the regional annual auxiliary electrical energy consumption in kilowatt-hours per year, determined according to section 10.5.2 of appendix N of this subpart, and the representative average unit cost in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act, the resulting sum then being rounded off to the nearest dollar per year.

(4) The energy factor for furnaces, expressed in percent, is the ratio of annual fuel output of useful energy delivered to the heated space to the total annual energy input to the furnace determined according to section 10.4 of appendix N of this subpart.

(5) The average standby mode and off mode electrical power consumption for furnaces shall be determined according to section 8.6 of appendix N of this subpart. Round the average standby mode and off mode electrical power consumption to the nearest watt.

(6) Other useful measures of energy consumption for furnaces shall be those measures of energy consumption which the Secretary determines are likely to assist consumers in making purchasing decisions and which are derived from the application of appendix N of this subpart.

(o) *Vented home heating equipment.* (1) When determining the annual fuel utilization efficiency (AFUE) of vented home heating equipment (see the note at the beginning of appendix O), expressed in percent (%), calculate AFUE in accordance with section 4.1.17 of appendix O of this subpart for vented heaters without either manual controls or thermal stack dampers; in accordance with section 4.2.6 of appendix O of this subpart for vented heaters equipped with manual controls; or in accordance with section 4.3.7 of appendix O of this subpart for vented heaters equipped with thermal stack dampers.

(2) When estimating the annual operating cost for vented home heating equipment, calculate the sum of:

(i) The product of the average annual fuel energy consumption, in Btus per year for natural gas, propane, or oil fueled vented home heating equipment, determined according to section 4.6.2 of appendix O of this subpart, and the representative average unit cost in dollars per Btu for natural gas, propane, or oil, as appropriate, as provided pursuant to section 323(b)(2) of the Act; plus

(ii) The product of the average annual auxiliary electric energy consumption in kilowatt-hours per year determined according to section 4.6.3 of appendix O of this subpart, and the representative average unit cost in dollars per kilowatt-hours as provided pursuant to section 323(b)(2) of the Act. Round the resulting sum to the nearest dollar per year.

(3) When estimating the operating cost per million Btu output for gas or oil vented home heating equipment with an auxiliary electric system, calculate the product of:

(i) The quotient of one million Btu divided by the sum of:

(A) The product of the maximum fuel input in Btus per hour as determined in sections 3.1.1 or 3.1.2 of appendix O of this subpart times the annual fuel utilization efficiency in percent as determined in sections 4.1.17, 4.2.6, or 4.3.7 of this appendix (as appropriate) divided by 100, plus

(B) The product of the maximum electric power in watts as determined in section 3.1.3 of appendix O of this subpart times the quantity 3.412; and

(ii) The sum of:

(A) the product of the maximum fuel input in Btus per hour as determined in sections 3.1.1 or 3.1.2 of this appendix times the representative unit cost in dollars per Btu for natural gas, propane, or oil, as appropriate, as provided pursuant to section 323(b)(2) of the Act; plus

(B) the product of the maximum auxiliary electric power in kilowatts as determined in section 3.1.3 of appendix O of this subpart times the representative unit cost in dollars per kilowatt-hour as provided pursuant to section 323(b)(2) of the Act. Round the resulting quantity to the nearest 0.01 dollar per million Btu output.

(p) *Pool heaters.* (1) Determine the thermal efficiency (E_t) of a pool heater expressed as a percent (%) in accordance with section 5.1 of appendix P to this subpart.

(2) Determine the integrated thermal efficiency (TE_l) of a pool heater expressed as a percent (%) in accordance

with section 5.4 of appendix P to this subpart.

(3) When estimating the annual operating cost of pool heaters, calculate the sum of:

(i) The product of the average annual fossil fuel energy consumption, in Btus per year, determined according to section 5.2 of appendix P to this subpart, and the representative average unit cost in dollars per Btu for natural gas or oil, as appropriate, as provided pursuant to section 323(b)(2) of the Act; plus

(ii) The product of the average annual electrical energy consumption in kilowatt-hours per year determined according to section 5.3 of appendix P to this subpart and converted to kilowatt-hours using a conversion factor of 3412 Btus = 1 kilowatt-hour, and the representative average unit cost in dollars per kilowatt-hours as provided pursuant to section 323(b)(2) of the Act. Round the resulting sum to the nearest dollar per year.

(q) *Fluorescent lamp ballasts.* (1) Calculate ballast luminous efficiency (BLE) using appendix Q to this subpart.

(2) Calculate power factor using appendix Q to this subpart.

(r) *General service fluorescent lamps, general service incandescent lamps, and incandescent reflector lamps.* Measure initial lumen output, initial input power, initial lamp efficacy, color rendering index (CRI), correlated color temperature (CCT), and time to failure of GSFLs, IRLs, and GSILs, as applicable, in accordance with appendix R to this subpart.

(s) *Faucets.* The maximum permissible water use allowed for lavatory faucets, lavatory replacement aerators, kitchen faucets, and kitchen replacement aerators, expressed in gallons and liters per minute (gpm and L/min), shall be measured in accordance to section 2(a) of appendix S of this subpart. The maximum permissible water use allowed for metering faucets, expressed in gallons and liters per cycle (gal/cycle and L/cycle), shall be measured in accordance to section 2(a) of appendix S of this subpart.

(t) *Showerheads.* The maximum permissible water use allowed for showerheads, expressed in gallons and liters per minute (gpm and L/min), shall be measured in accordance to section 2(b) of appendix S of this subpart.

(u) *Water closets.* Measure the water use for water closets, expressed in gallons or liters per flush (gpf or Lpf), in accordance with section 3(a) of appendix T to this subpart.

(v) *Urinals.* Measure the water use for urinals, expressed in gallons or liters per flush (gpf or Lpf), in accordance with section 3(b) of appendix T to this subpart.

(w) *Ceiling fans.* Measure the following attributes of a single ceiling fan in accordance with appendix U to this subpart: airflow; power consumption; ceiling fan efficiency, as applicable; ceiling fan energy index (CFEI), as applicable; standby power, as applicable; distance between the ceiling and lowest point of fan blades; blade span; blade edge thickness; and blade revolutions per minute (RPM).

(x) *Ceiling fan light kits.* (1) For each ceiling fan light kit that is required to comply with the energy conservation standards as of January 1, 2007:

(i) For a ceiling fan light kit with medium screw base sockets that is packaged with compact fluorescent lamps, measure lamp efficacy, lumen maintenance at 1,000 hours, lumen maintenance at 40 percent of lifetime, rapid cycle stress test, and time to failure in accordance with paragraph (y) of this section.

(ii) For a ceiling fan light kit with medium screw base sockets that is packaged with integrated LED lamps, measure lamp efficacy in accordance with paragraph (ee) of this section.

(iii) For a ceiling fan light kit with pin-based sockets that is packaged with fluorescent lamps, measure system efficacy in accordance with section 4 of appendix V of this subpart.

(iv) For a ceiling fan light kit with medium screw base sockets that is packaged with incandescent lamps, measure lamp efficacy in accordance with paragraph (r) of this section.

(2) For each ceiling fan light kit that requires compliance with the January 21, 2020 energy conservation standards:

(i) For a ceiling fan light kit packaged with compact fluorescent lamps, measure lamp efficacy, lumen maintenance at 1,000 hours, lumen maintenance at 40 percent of lifetime, rapid

cycle stress test, and time to failure in accordance with paragraph (y) of this section for each lamp basic model.

(ii) For a ceiling fan light kit packaged with general service fluorescent lamps, measure lamp efficacy in accordance with paragraph (r) of this section for each lamp basic model.

(iii) For a ceiling fan light kit packaged with incandescent lamps, measure lamp efficacy in accordance with paragraph (r) of this section for each lamp basic model.

(iv) For a ceiling fan light kit packaged with integrated LED lamps, measure lamp efficacy in accordance with paragraph (ee) of this section for each lamp basic model.

(v) For a ceiling fan light kit packaged with other fluorescent lamps (not compact fluorescent lamps or general service fluorescent lamps), packaged with other SSL products (not integrated LED lamps) or with integrated SSL circuitry, measure efficacy in accordance with section 3 of appendix V1 of this subpart for each lamp basic model or integrated SSL basic model.

(y) *Compact fluorescent lamps.* (1) Measure initial lumen output, input power, initial lamp efficacy, lumen maintenance at 1,000 hours, lumen maintenance at 40 percent of lifetime of a compact fluorescent lamp (as defined in 10 CFR 430.2), color rendering index (CRI), correlated color temperature (CCT), power factor, start time, standby mode energy consumption, and time to failure in accordance with appendix W of this subpart. Express time to failure in hours.

(2) Conduct the rapid cycle stress test in accordance with section 3.3 of appendix W of this subpart.

(z) *Dehumidifiers.* When using appendix X, determine the capacity, expressed in pints per day (pints/day), and the energy factor, expressed in liters per kilowatt hour (L/kWh), in accordance with section 4.1 of appendix X of this subpart. When using appendix X1, determine the capacity, expressed in pints/day, according to section 5.2 of appendix X1 to this subpart; determine the integrated energy factor, expressed in L/kWh, according to section 5.4 of appendix X1 to this subpart; and determine the case volume, expressed in cubic feet, for whole-home dehumidifiers in accordance with section 5.7 of appendix X1 of this subpart.

(aa) *Battery Chargers.* (1) For battery chargers subject to compliance with the relevant standard at § 430.32(z) as that standard appeared in the January 1, 2022, edition of 10 CFR parts 200–499:

(i) Measure the maintenance mode power, standby power, off mode power, battery discharge energy, 24-hour energy consumption and measured duration of the charge and maintenance mode test for a battery charger other than uninterruptible power supplies in accordance with appendix Y to this subpart;

(ii) Calculate the unit energy consumption of a battery charger other than uninterruptible power supplies in accordance with appendix Y to this subpart;

(iii) Calculate the average load adjusted efficiency of an uninterruptible power supply in accordance with appendix Y to this subpart.

(2) For a battery charger subject to compliance with any amended relevant standard provided in § 430.32 that is published after September 8, 2022:

(i) Measure active mode energy, maintenance mode power, no-battery mode power, off mode power and battery discharge energy for a battery charger other than uninterruptible power supplies in accordance with appendix Y1 to this subpart.

(ii) Calculate the standby power of a battery charger other than uninterruptible power supplies in accordance with appendix Y1, to this subpart.

(iii) Calculate the average load adjusted efficiency of an uninterruptible power supply in accordance with appendix Y1 to this subpart.

(bb) *External Power Supplies.* The energy consumption of an external power supply, including active-mode efficiency expressed as a percentage and the no-load, off, and standby mode energy consumption levels expressed in watts, shall be measured in accordance with appendix Z of this subpart.

(cc) *Furnace Fans.* The energy consumption of a single unit of a furnace fan basic model expressed in watts per 1000 cubic feet per minute (cfm) to the nearest integer shall be calculated in

accordance with Appendix AA of this subpart.

(dd) *Portable air conditioners.* (1) For single-duct and dual-duct portable air conditioners, measure the seasonally adjusted cooling capacity, expressed in British thermal units per hour (Btu/h), and the combined energy efficiency ratio, expressed in British thermal units per watt-hour (Btu/Wh) in accordance with appendix CC of this subpart.

(2) Determine the estimated annual operating cost for portable air conditioners, expressed in dollars per year, by multiplying the following two factors:

(i) For dual-duct portable air conditioners, the sum of AEC_{95} multiplied by 0.2, AEC_{83} multiplied by 0.8, and AEC_T as measured in accordance with section 5.3 of appendix CC of this subpart; or for single-duct portable air conditioners, the sum of AEC_{SD} and AEC_T as measured in accordance with section 5.3 of appendix CC of this subpart; and

(ii) A representative average unit cost of electrical energy in dollars per kilowatt-hour as provided by the Secretary.

(iii) Round the resulting product to the nearest dollar per year.

(ee) *Integrated light-emitting diode lamp.* (1) The input power of an integrated light-emitting diode lamp must be measured in accordance with section 3 of appendix BB of this subpart.

(2) The lumen output of an integrated light-emitting diode lamp must be measured in accordance with section 3 of appendix BB of this subpart.

(3) The lamp efficacy of an integrated light-emitting diode lamp must be calculated in accordance with section 3 of appendix BB of this subpart.

(4) The correlated color temperature of an integrated light-emitting diode lamp must be measured in accordance with section 3 of appendix BB of this subpart.

(5) The color rendering index of an integrated light-emitting diode lamp must be measured in accordance with section 3 of appendix BB of this subpart.

(6) The power factor of an integrated light-emitting diode lamp must be measured in accordance with section 3 of appendix BB of this subpart.

(7) The time to failure of an integrated light-emitting diode lamp must be measured in accordance with section 4 of appendix BB of this subpart.

(8) The standby mode power must be measured in accordance with section 5 of appendix BB of this subpart.

(ff) *Coolers and combination cooler refrigeration products.* (1) The estimated annual operating cost for models without an anti-sweat heater switch shall be the product of the following three factors, with the resulting product then being rounded to the nearest dollar per year:

(i) The representative average-use cycle of 365 cycles per year;

(ii) The average per-cycle energy consumption for the standard cycle in kilowatt-hours per cycle, determined according to appendix A of this subpart; and

(iii) The representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary.

(2) The estimated annual operating cost for models with an anti-sweat heater switch shall be the product of the following three factors, with the resulting product then being rounded to the nearest dollar per year:

(i) The representative average-use cycle of 365 cycles per year;

(ii) Half the sum of the average per-cycle energy consumption for the standard cycle and the average per-cycle energy consumption for a test cycle type with the anti-sweat heater switch in the position set at the factory just before shipping, each in kilowatt-hours per cycle, determined according to appendix A of this subpart; and

(iii) The representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary.

(3) The estimated annual operating cost for any other specified cycle type shall be the product of the following three factors, with the resulting product then being rounded to the nearest dollar per year:

(i) The representative average-use cycle of 365 cycles per year;

(ii) The average per-cycle energy consumption for the specified cycle type,

determined according to appendix A of this subpart; and

(iii) The representative average unit cost of electricity in dollars per kilowatt-hour as provided by the Secretary.

(4) The energy factor, expressed in cubic feet per kilowatt-hour per cycle, shall be:

(i) For models without an anti-sweat heater switch, the quotient of:

(A) The adjusted total volume in cubic feet, determined according to appendix A of this subpart, divided by—

(B) The average per-cycle energy consumption for the standard cycle in kilowatt-hours per cycle, determined according to appendix A of this subpart, the resulting quotient then being rounded to the second decimal place; and

(ii) For models having an anti-sweat heater switch, the quotient of:

(A) The adjusted total volume in cubic feet, determined according to appendix A of this subpart, divided by—

(B) Half the sum of the average per-cycle energy consumption for the standard cycle and the average per-cycle energy consumption for a test cycle type with the anti-sweat heater switch in the position set at the factory just before shipping, each in kilowatt-hours per cycle, determined according to appendix A of this subpart, the resulting quotient then being rounded to the second decimal place.

(5) The annual energy use, expressed in kilowatt-hours per year and rounded to the nearest kilowatt-hour per year, shall be determined according to appendix A of this subpart.

(6) Other useful measures of energy consumption shall be those measures of energy consumption that the Secretary determines are likely to assist consumers in making purchasing decisions which are derived from the application of appendix A of this subpart.

(7) The following principles of interpretation shall be applied to the test procedure. The intent of the energy test procedure is to simulate operation in typical room conditions (72 °F (22.2 °C)) with door openings by testing at 90 °F (32.2 °C) ambient temperature without door openings. Except for operating characteristics that are affected by ambient temperature (for example, compressor percent run time), the unit, when tested under this test procedure, shall operate in a manner equivalent to the unit's operation while in typical room conditions.

(i) The energy used by the unit shall be calculated when a calculation is provided by the test procedure. Energy consuming components that operate in typical room conditions (including as a result of door openings, or a function of humidity), and that are not excluded by this test procedure, shall operate in an equivalent manner during energy testing under this test procedure, or be accounted for by all calculations as provided for in the test procedure. Examples:

(A) Energy saving features that are designed to operate when there are no door openings for long periods of time shall not be functional during the energy test.

(B) The defrost heater shall neither function nor turn off differently during the energy test than it would when in typical room conditions. Also, the product shall not recover differently during the defrost recovery period than it would in typical room conditions.

(C) Electric heaters that would normally operate at typical room conditions with door openings shall also operate during the energy test.

(D) Energy used during adaptive defrost shall continue to be measured and adjusted per the calculation provided for in this test procedure.

(ii) DOE recognizes that there may be situations that the test procedures do not completely address. In such cases, a manufacturer must obtain a waiver in accordance with the relevant provisions of this part if:

(A) A product contains energy consuming components that operate differently during the prescribed testing than they would during representative average consumer use; and

(B) Applying the prescribed test to that product would evaluate it in a manner that is unrepresentative of its true energy consumption (thereby providing materially inaccurate comparative data).

(8) For non-compressor models, ''compressor'' and ''compressor cycles'' as used in appendix A of this subpart

shall be interpreted to mean ''refrigeration system'' and ''refrigeration system cycles,'' respectively.

(gg) *General Service Lamps.* (1) For general service incandescent lamps, use paragraph (r) of this section.

(2) For compact fluorescent lamps, use paragraph (y) of this section.

(3) For integrated LED lamps, use paragraph (ee) of this section.

(4) For other incandescent lamps, measure initial light output, input power, lamp efficacy, power factor, and standby mode power in accordance with appendix DD of this subpart.

(5) For other fluorescent lamps, measure initial light output, input power, lamp efficacy, power factor, and standby mode power in accordance with appendix DD of this subpart.

(6) For OLED and non-integrated LED lamps, measure initial light output, input power, lamp efficacy, power factor, and standby mode power in accordance with appendix DD of this subpart.

[42 FR 27898, June 1, 1977]

EDITORIAL NOTE: For FEDERAL REGISTER citations affecting § 430.23, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and at *www.govinfo.gov*.

§ 430.24 [Reserved]

§ 430.25 Laboratory Accreditation Program.

The testing for general service fluorescent lamps, general service incandescent lamps (with the exception of lifetime testing), general service lamps (with the exception of applicable lifetime testing), incandescent reflector lamps, compact fluorescent lamps, and fluorescent lamp ballasts, and integrated light-emitting diode lamps must be conducted by test laboratories accredited by an Accreditation Body that is a signatory member to the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA). A manufacturer's or importer's own laboratory, if accredited, may conduct the applicable testing.

[81 FR 72504, Oct. 20, 2016]

§ 430.27 Petitions for waiver and interim waiver.

(a) *General information.* This section provides a means for seeking waivers of the test procedure requirements of this subpart for basic models that meet the requirements of paragraph (a)(1) of this section. In granting a waiver or interim waiver, DOE will not change the energy use or efficiency metric that the manufacturer must use to certify compliance with the applicable energy conservation standard and to make representations about the energy use or efficiency of the covered product. The granting of a waiver or interim waiver by DOE does not exempt such basic models from any other regulatory requirement contained in this part or the certification and compliance requirements of 10 CFR part 429 and specifies an alternative method for testing the basic models addressed in the waiver.

(1) Any interested person may submit a petition to waive for a particular basic model any requirements of § 430.23 or of any appendix to this subpart, upon the grounds that the basic model contains one or more design characteristics which either prevent testing of the basic model according to the prescribed test procedures or cause the prescribed test procedures to evaluate the basic model in a manner so unrepresentative of its true energy and/or water consumption characteristics as to provide materially inaccurate comparative data.

(2) Manufacturers of basic model(s) subject to a waiver or interim waiver are responsible for complying with the other requirements of this subpart and with the requirements of 10 CFR part 429 regardless of the person that originally submitted the petition for waiver and/or interim waiver. The filing of a petition for waiver and/or interim waiver shall not constitute grounds for noncompliance with any requirements of this subpart.

(3) All correspondence regarding waivers and interim waivers must be submitted to DOE either electronically to *AS_Waiver_Requests@ee.doe.gov* (preferred method of transmittal) or by mail to U.S. Department of Energy, Building Technologies Program, Test Procedure Waiver, 1000 Independence