Ref. No.	Standard designation	CFR section
RS–1	ANSI/ASHRAE/IESNA 90.1–1989, Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings, and Addenda 90.1b–1992, 90.1c–1993, 90.1d–1992, 90.1e–1992, 90.1f–1995, 90.1g–1993, 90.1i–1993, American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., ASHRAE 1791 Tullie Circle NE, Atlanta, GA 30329.	434.301.1; 434.402.1.2.4; 434.402.4.2; 434.403.2.1.
RS–2	ANSI/ASHRAE 55–1992 including addenda 55a–1995, Thermal Environmental Conditions for Human Occupancy, American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 1791 Tullie Circle NE, Atlanta, GA 30329.	434.301.2; 434.519.1.1.
RS–3	NEMA MG1–1993, ''Motors and Generators,'' Revision No. 1, December 7, 1993, National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.	434.401.2.1.
RS–4	ASHRAE, Handbook, 1993 Fundamentals Volume, American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., 1791 Tullie Circle NE, Atlanta, GA 30329.	434.402.1.1; 434.402.1.2.1; 434.402.1.2.2; 434.402.1.2.4; 434.402.2.2.5.
RS–5	ASTM C 177–85 (Reapproved 1993), Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.	434.402.1.1; 434.402.1.2.1; 434.402.1.2.2.
RS–6	ASTM C 518–91, Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.	434.402.1.1; 434.402.1.2.1; Table 402.1.2.2; Table 403.2.9.2.
RS–7	ASTM C 236–89 (Reapproved 1993), Test Method for Steady-State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.	434.402.1.1; 434.402.1.2.1; 434.402.1.2.2.
RS–8	ASTM C 976–90, Test Method for Thermal Performance of Building Assemblies by Means of a Calibrated Hot Box, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.	434.402.1.1; 434.402.1.2.1; 434.402.1.2.2.
RS–9	Report TVAHB–3007, 1981, ''Thermal Bridges in Sheet Metal Construction'' by Gudni Johannesson. Lund Institute of Technology, Lund, Sweden.	434.402.1.2.3.
RS–10	ASTM E 283–91, Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Difference Across the Specimen, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.	434.402.2; 434.402.2.1.
RS–11	ANSI/AAMA/NWWDA 101/I.S.2–97, Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors, American Architectural Manufacturers Association, 1827 Walden Office Square, Suite 104, Schaumburg, IL 60173–4628.	434.402.2.1; 434.402.2.2.4.
RS–12	ASTM D 4099–95, Standard Specification for Poly (Vinyl Chloride) (PVC) Prime Windows/Sliding Glass Doors, American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.	434.402.2.1.
RS–13	ANSI/AAMA/NWWDA 101/I.S.2–97, Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors, National Wood Window and Door Association (formerly the National Woodwork Manufacturers Association), 1400 East Toughy Avenue, Suite 470, Des Plaines, IL 60018.	434.402.2.1.
RS–14	ANSI/NWWDA I.S.3–95, Wood Sliding Patio Doors, National Wood Window and Door Association (formerly the National Woodwork Manufacturers Association), 1400 East Toughy Avenue, Suite 470, Des Plaines, IL 60018.	434.402.2.2.1.
RS–15	ARI Standard 210/240–94, Unitary Air-Conditioning and Air-Source Heat Pump Equipment 1994. Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive, Suite 425, Arlington, VA 22203.	434.403.1.
RS–16	ARI Standard 340/360–93, Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment 1993 edition. Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive, Suite 425, Arlington, VA 22203.	434.403.1.
RS–17	ARI 310/380–93, Packaged Terminal Air-Conditioners and Heat Pumps, 1993 edition. Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive, Suite 425, Arlington, VA 22203.	434.403.1.
RS–18	NFRC 100–97, Procedure for Determining Fenestration Product Thermal Properties, National Fenestration Rating Council, Inc., 1300 Spring Street, Suite 500, Silver Spring, MD 20910.	434.402.1.2.4.
RS–19	NFRC 200—Procedure for Determining Fenestration Product Solar Heat Gain Coefficients at Normal Incidence (1995) National Fenestration Rating Council, Inc., 1300 Spring Street, Suite 500, Silver Spring, MD 20910.	434.402.1.2.4.
RS–20	Reserved.	
RS–21	Z21.47–1993, Gas-Fired Central Furnaces, including addenda Z21.47a–1995, American Gas Association, 400 North Capitol Street, N.W. Washington, DC 20001.	434.403.1.
RS–22	U.L. 727, including addendum dated January 30, 1996, Oil-Fired Central Furnaces (Eighth Edition) 1994, available from: Global Documents, 15 Inverness Way East, Englewood, CO 80112–5704, Underwriters Laboratories, Northbrook, IL 60062, 1994..	434.403.1.
RS–23	ANSI Z83.9–90, Including addenda Z83.9a–1992, Gas-Fired Duct Furnaces, 1990. (Addendum 90.1b) available from: Global Documents, 15 Inverness Way East, Englewood, CO 80112–5704.	434.403.1.
RS–24	ANSI Z83.8–96, Gas Unit Heater and Gas-Fired Duct Furnaces, American National Standards Institute, 11 West 42nd Street, New York, NY 10036.	434.403.1.

Ref. No.	Standard designation	CFR section
RS–25	U.L. 731, Oil-Fired Unit Heaters (Fifth Edition) 1995 available from: Global Documents, 15 Inverness Way East, Englewood, CO 80112–5704, Underwriters Laboratories, Northbrook, IL 60062.	434.403.1.
RS–26	CTI Standard–201, Standard for the Certification of Water-Cooling Towers Thermal Performance, November 1996, Cooling Tower Institute, P.O. Box 73383, Houston, TX 77273.	434.403.1.
RS–27	ARI Standard 320–93, Water-Source Heat Pumps, Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive, Arlington, VA 22203.	434.403.1.
RS–28	ARI Standard 325–93, Ground Water-Source Heat Pumps, Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive, Arlington, VA 22203.	434.403.1.
RS–29	ARI Standard 365–94, Commercial and Industrial Unitary Air-Conditioning Condensing Units, Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive, Arlington, VA 22203.	434.403.1.
RS–30	ARI Standard 550–92, Centrifugal and Rotary Screw Water-Chilling Packages, Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive, Arlington, VA 22203.	434.403.1.
RS–31	ARI Standard 590–92, Positive Displacement Compressor Water-Chilling Packages, Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive, Arlington, VA 22203.	434.403.1.
RS–32	ANSI Z21.13–1991, including addenda Gas-Fired Low-Pressure Steam and Hot Water Boilers, Addenda Z21.13a–1993 and Z21–13b–1994, American National Standards Institute, 11 West 42nd Street, New York, NY 10036.	434.403.1.
RS–33	ANSI/U.L. 726 (7th edition, 1995), Oil-Fired Boiler Assemblies, available from: Global Documents, 15 Inverness Way East, Englewood, CO 80112–5704, Underwriters Laboratories, Northbrook, IL 60062.	434.403.1.
RS–34	HVAC Duct Construction Standards—Metal and Flexible, 2nd edition, 1995, Sheet Metal and Air-Conditioning Contractors' National Association, Inc., 4201 Lafayette Center Drive, Chantilly, VA 20151.	434.403.2.9.3.
RS–35	HVAC Air Duct Leakage Test Manual, 1st edition, 1985, Sheet Metal and Air-Conditioning Contractors' National Association, Inc., 4201 Lafayette Center Drive, Chantilly, VA 20151.	434.403.2.9.3; 434.403.1.
RS–36	Fibrous Glass Duct Construction Standards, 6th edition, 1992, Sheet Metal and Air-Conditioning Contractors National Association, Inc., 4201 Lafayette Center Drive, Chantilly, VA 20151.	434.403.2.9.3.
RS–37	Reserved.	
RS–38	ANSI Z21.56–1994, Gas-Fired Pool Heaters; Addenda Z21.56a–1996, American National Standards Institute, 11 West 42nd Street, New York, NY 10036; American Gas Association, 1515 Wilson Boulevard, Arlington, VA 22209.	Table 404.1.
RS–39	ANSI Z21.10.3–1993, Gas Water Heaters, Volume III, Storage with Input Ratings above 75,000 Btu's per Hour, Circulating and Instantaneous Water Heaters, American National Standards Institute, 11 West 42nd Street, New York, NY 10036; American Gas Association, 1515 Wilson Boulevard, Arlington, VA 22209.	Table 404.1; 434.404.1.1.
RS–40	ANSI/AHAM RAC–1–1992, Room Air Conditioners, Association of Home Appliance Manufacturers, 20 North Wacker Drive, Chicago, IL 60606.	434.403.1.
RS–41	ASHRAE Standard 62–1989, Ventilation for Acceptable Indoor Air Quality, American Society of Heating, Refrigerating and Air-Conditioning Engineers, 1791 Tulle Circle, Atlanta, GA 30329.	434.403.2.4; 434.403.2.8; 434.519.3.
RS–42	ANSI Z21.66–1996, Automatic Vent Damper Devices for Use with Gas-Fired Appliances, available from: Global Documents, 15 Inverness Way East, Englewood, CO 80112–5704..	434.404.1.
RS–43	NEMA MG 10–1994, Energy Management Guide for Selection and Use of Polyphase Motors, National Electric Manufacturers Association, National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.	434.401.2.1.
RS–44	NEMA MG 11–1977 (Revised 1982, 1987, Energy Management Guide for Selection and Use of Single-Phase Motors, National Electrical Manufacturers Association, National Electrical Manufacturers Association, 1300 North 17th Street, Suite 1847, Rosslyn, VA 22209.	434.401.2.1.
RS–45	ARI Standard 330–93, Ground-Source Closed-Loop Heat Pumps, Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive, Arlington, VA 22209.	434.403.1.
RS–46	ARI Standard 560–92, Absorption Water Chilling and Water Heating Packages, Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive, Arlington, VA 22209.	434.403.1.
RS–47	ASHRAE, Handbook, HVAC Applications; I-P Edition, 1995, American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., 1791 Tullie Circle NE, Atlanta, GA 30329.	434.518.2.

[65 FR 60012, Oct. 6, 2000, as amended at 69 FR 18803, Apr. 9, 2004]

PART 435—ENERGY EFFICIENCY STANDARDS FOR THE DESIGN AND CONSTRUCTION OF NEW FEDERAL LOW-RISE RESIDENTIAL BUILDINGS

Subpart A—Mandatory Energy Efficiency Standards for Federal Low-Rise Residential Buildings.

Subpart B—Reduction in Scope 1 Fossil Fuel-Generated Energy Consumption

Subpart C—Green Building Certification for Federal Buildings

Subpart D—Voluntary Performance Standards for New Non-Federal Residential Buildings [Reserved]

Subpart E—Mandatory Energy Efficiency Standards for Federal Residential Buildings

AUTHORITY: 42 U.S.C. 6831–6832; 6834–6836; 42 U.S.C. 8253–54; 42 U.S.C. 7101 *et seq.*

SOURCE: 53 FR 32545, Aug. 25, 1988, unless otherwise noted.

Subpart A—Mandatory Energy Efficiency Standards for Federal Low-Rise Residential Buildings.

SOURCE: 71 FR 70283, Dec. 4, 2006, unless otherwise noted.

§ 435.1 Purpose and scope.

(a) This part establishes energy efficiency performance standard for the construction of new Federal low-rise residential buildings as required by section 305(a) of the Energy Conservation and Production Act, as amended (42 U.S.C. 6834(a)).

(b) This part also establishes a maximum allowable fossil fuel-generated energy consumption standard for new Federal buildings that are low-rise residential buildings and major renovations to Federal buildings that are low-rise residential buildings, for which design for construction began on or after May 1, 2025

(c) This part also establishes green building certification requirements for new Federal buildings that are low-rise residential buildings and major renovations to Federal buildings that are low-rise residential buildings, for which design for construction began on or after October 14, 2015.

[71 FR 70283, Dec. 4, 2006, as amended at 79 FR 61571, Oct. 14, 2014; 89 FR 35433, May 1, 2024]

§ 435.2 Definitions.

For purposes of this part, the following terms, phrases and words shall be defined as follows:

Construction cost means all costs associated with the construction of a new Federal building. It includes, but not limited to, the cost of preliminary planning, engineering, architectural, permitting, fiscal, and economic investigations and studies, surveys, designs, plans, working drawings, specifications, procedures, and other similar actions necessary for the construction of a new Federal building. It does not include the cost of acquiring the land.

Design for construction means the stage when the energy efficiency and sustainability details (such as insulation levels, HVAC systems, water-using

systems, etc.) are either explicitly determined or implicitly included in a project cost specification.

Design for renovation means the stage when the energy efficiency and sustainability details (such as insulation levels, HVAC systems, water-using systems, etc.) are either explicitly determined or implicitly included in a renovation project cost specification.

DOE means U.S. Department of Energy.

EISA-subject building or project means, for purposes of this rule, any new building or renovation project that is subject to the cost thresholds and reporting requirements in Section 433 of EISA ((42 U.S.C. 6834(a)(3)(D)(i))). The cost threshold referenced in Section 433 of EISA is $2.5 million in 2007 dollars. GSA provides a table of annual updates to this cost threshold at *https://www.gsa.gov/real-estate/design-and-construction/annual-prospectus-thresholds*. GSA also provides a second cost threshold for renovations of leased buildings that is ½ of the cost threshold for renovation of Federally owned buildings.

Federal agency means any department, agency, corporation, or other entity or instrumentality of the executive branch of the Federal Government, including the United States Postal Service, the Federal National Mortgage Association, and the Federal Home Loan Mortgage Corporation.

Federal building means any building to be constructed by, or for the use of, any Federal agency. Such term shall include buildings built for the purpose of being leased by a Federal agency and privatized military housing.

Fiscal Year (FY) means the 12-month period beginning on October 1 of the year prior to the specified calendar year and ending on September 30 of the specified calendar year.

Fossil fuel-generated energy consumption means the on-site stationary consumption of fossil fuels that contribute to Scope 1 emissions for generation of electricity, heat, cooling, or steam as defined by ''Federal Greenhouse Gas Accounting and Reporting Guidance'' (Council on Environmental Quality, January 17, 2016). This includes, but is not limited to, emissions that result from combustion of fuels in stationary sources (*e.g.*, boilers, furnaces, turbines, and emergency generators). This term does not include mobile sources, fugitive emissions, or process emissions as defined by ''Federal Greenhouse Gas Accounting and Reporting Guidance'' (Council on Environmental Quality, January 17, 2016).

ICC means International Code Council.

IECC means International Energy Conservation Code.

IECC Baseline Building 2004 means a building that is otherwise identical to the proposed building but is designed to meet, but not exceed, the energy efficiency specifications in the ICC IECC 2004 (incorporated by reference, see § 435.3).

IECC Baseline Building 2009 means a building that is otherwise identical to the proposed building but is designed to meet, but not exceed, the energy efficiency specifications in the ICC IECC 2009 (incorporated by reference, see § 435.3).

IECC Baseline Building 2015 means a building that is otherwise identical to the proposed building but is designed to meet, but not exceed, the energy efficiency specifications in the ICC IECC 2015 (incorporated by reference, see § 435.3).

IECC Baseline Building 2021 means a building that is otherwise identical to the proposed building but is designed to meet, but not exceed, the energy efficiency specifications in the ICC IECC 2021 (incorporated by reference, see § 435.3).

Life-cycle cost means the total cost related to energy conservation measures of owning, operating and maintaining a building over its useful life as determined in accordance with 10 CFR part 436.

Life-cycle cost-effective means that the proposed building has a lower life-cycle cost than the life-cycle costs of the baseline building, as described by 10 CFR 436.19, or has a positive estimated net savings, as described by 10 CFR 436.20, or has a savings-to-investment ratio estimated to be greater than one, as described by 10 CFR 436.21; or has an adjusted internal rate of return, as described by 10 CFR 436.22, that is estimated to be greater than the discount rate as listed in OMB Circular Number

A–94 ''Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs.''

Low-rise residential building means any building three stories or less in height above grade that includes sleeping accommodations where the occupants are primarily permanent in nature (30 days or more).

Major renovation means either major renovation of all Scope 1 fossil fuel-using systems in a building or major renovation of one or more Scope 1 fossil fuel-using building systems or components, as defined in this section.

Major renovation cost means all costs associated with the repairing, remodeling, improving, extending, or other changes in a Federal building. It includes, but is not limited to, the cost of preliminary planning, engineering, architectural, permitting, fiscal, and economic investigations and studies, surveys, designs, plans, working drawings, specifications, procedures, and other similar actions necessary for the alteration of a Federal building.

Major renovation of all Scope 1 fossil fuel-using systems in a building means construction on an existing building that is so extensive that it replaces all Scope 1 fossil fuel-using systems in the building. This term includes, but is not limited to, comprehensive replacement or restoration of most or all major systems, interior work (such as ceilings, partitions, doors, floor finishes, etc.), or building elements and features.

Major renovation of a Scope 1 fossil fuel-using building system or Scope 1 fossil fuel-using component means changes to a building that provide significant opportunities for energy efficiency or reduction in fossil fuel-related energy consumption. This includes, but is not limited to, replacement of the HVAC system, hot water system, or cooking system, or other fossil fuel-using systems or components of the building that have a major impact on fossil fuel usage.

New Federal building means any new building (including a complete replacement of an existing building from the foundation up) to be constructed by, or for the use of, any federal agency. Such term shall include buildings built for the purpose of being leased by a federal agency, and privatized military housing.

Proposed building means the design for construction of a new Federal low-rise residential building, or major renovation to a Federal low-rise residential building, proposed for construction.

Shift adjustment multiplier means that agencies can apply a multiplication factor to their Maximum Allowable Fossil Fuel-Generated Energy Consumption by Building Category target based upon the weekly hours of active operation of the building. The weekly hours of operation to use as a basis for the shift adjustment multiplier lookup should be based upon the time in which in the building is actively occupied and operating per its intended use type and should include unoccupied hours or other times of limited use (such as night-time setback hours).

Technical impracticability means achieving the Scope 1 fossil fuel-based energy consumption targets would:

(1) Not be feasible from an engineering design or execution standpoint due to existing physical or site constraints that prohibit modification or addition of elements or spaces;

(2) Significantly obstruct building operations and the functional needs of a building, specifically for industrial process loads, critical national security functions, mission critical information systems as defined in NIST SP 800–60 Vol. 2 Rev. 1, and research operations, or

(3) Significantly degrade energy resiliency and energy security of building operations as defined in 10 U.S.C. 101(e)(6) and 10 U.S.C. 101(e)(7) respectively.

[71 FR 70283, Dec. 4, 2006, as amended at 72 FR 72571, Dec. 21, 2007; 76 FR 49285, Aug. 10, 2011; 82 FR 2867, Jan. 10, 2017; 87 FR 19613, Apr. 5, 2022; 89 FR 35433, May 1, 2024]

§ 435.3 Materials incorporated by reference.

(a) Certain material is incorporated by reference into this subpart with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, DOE must publish a document in the FEDERAL REGISTER and the

material must be available to the public. All approved material is available for inspection at DOE, and at the National Archives and Records Administration (NARA). Contact DOE at: The U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, Sixth Floor, 950 L'Enfant Plaza SW, Washington, DC 20024, (202) 586–9127, *Buildings@ee.doe.gov*, *https://www.energy.gov/eere/buildings/building-technologies-office*. For information on the availability of this material at NARA, email: *fr.inspection@nara.gov*, or go to: *www.archives.gov/federal-register/cfr/ibr-locations.html*. The material may be obtained from the sources in the following paragraphs of this section.

(b) *ICC*. International Code Council, 4051 West Flossmoor Road, Country Club Hills, IL 60478, 1–888–422–7233, or go to *http://www.iccsafe.org/*.

(1) ICC International Energy Conservation Code (IECC), 2004 Supplement Edition (''IECC 2004''), January 2005, IBR approved for §§ 435.2, 435.4, 435.5;

(2) ICC International Energy Conservation Code (IECC), 2009 Edition (''IECC 2009''), January 2009, IBR approved for §§ 435.2, 435.4, 435.5.

(3) ICC International Energy Conservation Code (IECC), 2015 Edition (''IECC 2015''), published May 30, 2014, IBR approved for §§ 435.2, 435.4, 435.5.

(4) ICC 2021 International Energy Conservation Code (IECC), Redline Version, Copyright 2021, (''IECC 2021''), IBR approved for §§ 435.2, 435.4, and 435.5.

[76 FR 49285, Aug. 10, 2011, as amended at 82 FR 2867, Jan. 10, 2017; 87 FR 19613, Apr. 5, 2022]

§ 435.4 Energy efficiency performance standard.

(a)(1) All Federal agencies shall design new Federal buildings that are low-rise residential buildings, for which design for construction began on or after January 3, 2007, but before August 10, 2012, to:

(i) Meet the IECC 2004 (incorporated by reference, see § 435.3), and

(ii) If life-cycle cost-effective, achieve energy consumption levels, calculated consistent with paragraph (b) of this section, that are at least 30 percent below the levels of the IECC Baseline Building 2004.

(2) All Federal agencies shall design new Federal buildings that are low-rise residential buildings, for which design for construction began on or after August 10, 2012, but before January 10, 2018 to:

(i) Meet the IECC 2009 (incorporated by reference, see § 435.3), and

(ii) If life-cycle cost-effective, achieve energy consumption levels, calculated consistent with paragraph (b) of this section, that are at least 30 percent below the levels of the IECC Baseline Building 2009.

(3) All Federal agencies shall design new Federal buildings that are low-rise residential buildings, for which design for construction began on or after January 10, 2018, but before April 5, 2023 to:

(i) Meet the IECC 2015, (incorporated by reference, see § 435.3), including the mandatory mechanical ventilation requirements in Section R403.6 of the IECC 2015; and

(ii) If life-cycle cost-effective, achieve energy consumption levels, calculated consistent with paragraph (b) of this section, that are at least 30 percent below the levels of the IECC Baseline Building 2015.

(4) All Federal agencies shall design new Federal buildings that are low-rise residential buildings, for which design for construction began on or after April 5, 2023 to:

(i) Meet the IECC 2021, (incorporated by reference, see § 435.3); and

(ii) If life-cycle cost-effective, achieve energy consumption levels, calculated consistent with paragraph (b) of this section, that are at least 30 percent below the levels of the IECC Baseline Building 2021.

(b)(1) For new Federal low-rise residential buildings whose design for construction began before January 10, 2018, energy consumption for the purposes of calculating the 30 percent savings shall include space heating, space cooling, and domestic water heating.

(2) For new Federal low-rise residential buildings whose design for construction began on or after before January 10, 2018, energy consumption for

the purposes of calculating the 30 percent savings shall include space heating, space cooling, lighting, mechanical ventilation, and domestic water heating.

(c) If a 30 percent reduction is not life-cycle cost-effective, the design of the proposed building shall be modified so as to achieve an energy consumption level at or better than the maximum level of energy efficiency that is life-cycle cost-effective, but at a minimum complies with paragraph (a) of this section.

[71 FR 70283, Dec. 4, 2006, as amended at 72 FR 72571, Dec. 21, 2007; 76 FR 49285, Aug. 10, 2011; 82 FR 2867, Jan. 10, 2017; 87 FR 19613, Apr. 5, 2022]

§ 435.5 Performance level determination.

(a) For new Federal buildings for which design for construction began on or after January 3, 2007, but before August 10, 2012, each Federal agency shall determine energy consumption levels for both the IECC Baseline Building 2004 and proposed building by using the Simulated Performance Alternative found in section 404 of the IECC 2004 (incorporated by reference, see § 435.3).

(b) For new Federal buildings for which design for construction began on or after August 10, 2012, but before January 10, 2018, each Federal agency shall determine energy consumption levels for both the IECC Baseline Building 2009 and proposed building by using the Simulated Performance Alternative found in section 405 of the IECC 2009 (incorporated by reference, see § 435.3).

(c) For new Federal buildings for which design for construction began on or after January 10, 2018 but before April 5, 2023 each Federal agency shall determine energy consumption levels for both the IECC Baseline Building 2015 and proposed building by using the Simulated Performance Alternative found in section R405 of the IECC 2015 (incorporated by reference, see § 435.3).

(d) For new Federal buildings for which design for construction began on or after April 5, 2023 each Federal agency shall determine energy consumption levels for both the IECC Baseline Building 2021 and proposed building by using the Simulated Performance Alternative found in section R405 of the IECC 2021 (incorporated by reference, *see* § 435.3).

[82 FR 2867, Jan. 10, 2017, as amended at 87 FR 19613, Apr. 5, 2022]

§ 435.6 Life-cycle costing.

Each Federal agency shall determine life-cycle cost-effectiveness by using the procedures set out in subpart A of 10 CFR part 436. A Federal agency may choose to use any of four methods, including lower life-cycle costs, positive net savings, savings-to-investment ratio that is estimated to be greater than one, and an adjusted internal rate of return that is estimated to be greater than the discount rate as listed in OMB Circular Number A–94 ''Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs.''

[71 FR 70283, Dec. 4, 2006, redesignated at 79 FR 61571, Oct. 14, 2014]

Subpart B—Reduction in Scope 1 Fossil Fuel-Generated Energy Consumption

SOURCE: 89 FR 35434, May 1, 2024, unless otherwise noted.

§ 435.200 Scope 1 Fossil fuel-generated energy consumption requirement.

(a) *New EISA-Subject buildings.* (1) New Federal buildings that are low-rise residential buildings, for which design for construction began on or after May 1, 2025, must be designed to meet the requirements of paragraph (c) of this section if:

(i) For all leased buildings, the construction cost of the new building exceeds GSA's Annual Prospectus Thresholds that are found at *www.gsa.gov/real-estate/design-construction/gsa-annual-prospectus-thresholds*.

(ii) For all Federally owned non-public buildings, the cost of the building is at least $2,500,000 (in 2007 dollars, adjusted for inflation). For the purposes of calculating this threshold, agencies must set the Bureau of Labor and Statistics CPI Inflation calculator to $2,500,000 in October of 2006 (to represent the value of the original cost threshold) and then set for October of the FY during which the design for construction of the project began or is set to begin.

(b) *Major renovations of EISA-Subject buildings.* (1) Major renovations to Federal buildings that are low-rise residential buildings, for which design for construction began on or after May 1, 2025, must be designed to meet the requirements of paragraph (c) of this section if the cost of the major renovation is at least $2,500,000 (in 2007 dollars, adjusted for inflation). For the purposes of calculating this threshold, projects should set the Bureau of Labor and Statistics CPI Inflation calculator to $2,500,000 in October of 2006 (to represent the value of the original cost threshold) and then set for October of the FY during which the design for construction of the project began or is set to begin.

(2) This subpart applies only to the portions of the proposed building or proposed building systems that are being renovated and to the extent that the scope of the renovation permits compliance with the applicable requirements in this subpart. Unaltered portions of the proposed building or proposed building systems are not required to comply with this subpart.

(3) For leased buildings, this subpart applies to major renovations only if the proposed building was originally built for the use of any Federal agency, including for the purpose of being leased by a Federal agency.

(c) *Federal buildings that are of the type included in Appendix A of this subpart*—(1) *New Construction and Major Renovations of all Scope 1 Fossil Fuel-Using Systems in an EISA-Subject Building.*

(i) Design for construction began during FY 2024 through FY 2029. For new construction or major renovations of all fossil fuel-using systems in an EISA-subject building, for which design for construction or renovation, as applicable, began during FY 2024 through 2029, the Scope 1 fossil fuel-generated energy consumption of the proposed building, based on the building design and calculated according to § 435.201(a), must not exceed the value identified in Tables A–1a to A–2a (if targets based on Scope 1 emissions are used) or Tables A–1b to A–2b (if targets based on kBtu of fossil fuel usage are used) of Appendix A of this subpart for the associated building type, climate zone, and fiscal year in which design for construction began.

(A) Federal agencies may apply a shift adjustment multiplier to the values in Tables A–1a to A–2a or Tables A–1b to A–2b based on the following baseline hours of operation assumed in Tables A–1a to A–2a or Tables A–1b to A–2b.

(B) To calculate the shift adjustment multiplier, agencies shall estimate the number of shifts for their new building and multiply by the appropriate factor shown below in Table 1 for their building type. The Scope 1 fossil fuel-generated energy consumption target for the building would be the value in either Tables A–1a to A–2a or Tables A–1b to A–2b multiplied by the multiplier calculated in the previous sentence.

TABLE 1—SHIFT ADJUSTMENT MULTIPLIER BY HOURS OF OPERATION AND BUILDING TYPE

Building activity/type	Weekly hours of operation		
	50 or less	51 to 167	168
Admin/professional office	1	1	1.4
Bank/other financial	1	1	1.4
Government office	1	1	1.4
Medical office(non-diagnostic)	1	1	1.4
Mixed-use office	1	1	1.4
Other office	1	1	1.4
Laboratory	1	1	1.4
Distribution/shipping center	0.7	1.4	2.1
Nonrefrigerated warehouse	0.7	1.4	2.1
Convenience store	1	1	1.4
Convenience store with gas	1	1	1.4
Grocery store/food market	1	1	1.4
Other food sales	1	1	1.4
Fire station/police station	0.8	0.8	1.1
Other public order and safety	0.8	0.8	1.1
Medical office (diagnostic)	1	1	1.5
Clinic/other outpatient health	1	1	1.5
Refrigerated warehouse	1	1	1

TABLE 1—SHIFT ADJUSTMENT MULTIPLIER BY HOURS OF OPERATION AND BUILDING TYPE—Continued

Building activity/type	Weekly hours of operation		
	50 or less	51 to 167	168
Religious worship	0.9	1.7	1.7
Entertainment/culture	0.8	1.5	1.5
Library	0.8	1.5	1.5
Recreation	0.8	1.5	1.5
Social/meeting	0.8	1.5	1.5
Other public assembly	0.8	1.5	1.5
College/university	0.8	1.3	1.3
Elementary/middle school	0.8	1.3	1.3
High school	0.8	1.3	1.3
Preschool/daycare	0.8	1.3	1.3
Other classroom education	0.8	1.3	1.3
Fast food	0.4	1.1	2.1
Restaurant/cafeteria	0.4	1.1	2.1
Other food service	0.4	1.1	2.1
Hospital/inpatient health	1	1	1
Nursing home/assisted living	1	1	1
Dormitory/fraternity/sorority	1	1	1
Hotel	1	1	1
Motel or inn	1	1	1
Other lodging	1	1	1
Vehicle dealership/showroom	0.8	1.2	1.8
Retail store	0.8	1.2	1.8
Other retail	0.8	1.2	1.8
Post office/postal center	0.7	1.5	1.5
Repair shop	0.7	1.5	1.5
Vehicle service/repair shop	0.7	1.5	1.5
Vehicle storage/maintenance	0.7	1.5	1.5
Other service	0.7	1.5	1.5
Strip shopping mall	1	1	1
Enclosed mall	1	1	1
Bar/Pub/Lounge	1	1	1.4
Courthouse/Probation Office	1	1	1.4

(ii) Design for construction began during or after FY 2030. For new construction and major renovations of all Scope 1 fossil fuel-using systems in an EISA-subject building, the Scope 1 fossil fuel-generated energy consumption of the proposed building, based on building design and calculated according to § 435.201(a), must be zero.

(2) Major Renovations of a Scope 1 Fossil Fuel-Using Building System or Component within an EISA-Subject Building shall follow the renovation requirements in section 4.2.1.3 of the applicable building baseline energy efficiency standards listed in § 435.4 substituting the term ''design for construction'' with ''design for renovation'' for the relevant date, and shall replace all equipment that is included in the renovation with all electric or non-fossil fuel-using ENERGY STAR or FEMP designated products as defined in § 436.42. For component level renovations, Agencies shall replace all equipment that is part of the renovation with all electric or non-fossil fuel-using ENERGY STAR or FEMP designated products as defined in § 436.42.

(d) *EISA-Subject buildings that are of the type not included in Appendix A of this subpart*—(1) *Process load buildings.* For building types that are not included in any of the building types listed in Tables A–1a to A–2a or A–1b to A–2b of appendix A of this subpart, or for building types in these tables that contain significant process loads, Federal agencies must select the applicable building type, climate zone, and fiscal year in which design for construction began from Tables A–1a to A–2a or A–1b to A–2b of appendix A of this subpart that most closely corresponds to the proposed building without the process load. The estimated Scope 1 fossil fuel-generated energy consumption of the process load must be added to the maximum allowable Scope 1 fossil fuel-generated energy consumption of the applicable building type for the appropriate fiscal year and climate zone to

calculate the maximum allowable Scope 1 fossil fuel-generated energy consumption for the building. The same estimated Scope 1 fossil fuel-generated energy consumption of the process load that is added to the maximum allowable Scope 1 fossil fuel-generated energy consumption of the applicable building must also be used in determining the Scope 1 fossil fuel-generated energy consumption of the proposed building.

(2) *Mixed-use buildings.* For buildings that combine two or more building types with process loads or, alternatively, that combine one or more building types with process loads with one or more building types in Tables A–1a toA–2a or A–1b to A–2b of appendix A of this subpart, the maximum allowable Scope 1 fossil fuel-generated energy consumption of the proposed building is equal to the averaged process load building values determined under paragraph (d)(1) of this section and the applicable building type values in Tables A–1a toA–2a or A–1b to A–2b of appendix A of this subpart, weighted by floor area. Equation 1 shall be used for mixed use buildings.

Equation 1: Scope 1 Fossil fuel generated energy consumption for a mixed-use building = the sum across all building uses of (the fraction of total floor building floor area for building use i times the allowable fossil fuel-generated energy consumption for building use i)

Equation 1 may be rewritten as:

$$\textit{Scope 1 Fossil Fuel} - \textit{Generated Energy Consumption for a Mixed Use Building} = \sum_{i=1}^{n} (\textit{Fraction of Total Building Floor Area for Building Use i times Allowable Scope 1 Fossil Fuel} - \textit{Generated Energy Consumption for Building Use i})$$

§ 435.201 Scope 1 Fossil fuel-generated energy consumption determination.

(a) The Scope 1 fossil fuel-generated energy consumption of a proposed design is calculated as follows:

Equation: Scope 1 Fossil Fuel-Generated Energy Consumption = Direct Fossil Fuel Consumption of Proposed Building/Floor Area

Where:

Direct Scope 1 Fossil Fuel-Generated Energy Consumption of Proposed Building equals the total site Scope 1 fossil fuel-generated energy consumption of the proposed building calculated in accordance with the method required in §435.5(d), and measured in thousands of British thermal units per year (kBtu/yr), except that this term does not include fossil fuel consumption for emergency electricity generation. Agencies must include all onsite fossil fuel use or Scope 1 emissions associated with non-emergency generation from backup generators (such as those for peak shaving or peak shifting). Any energy generation or Scope 1 emissions associated with biomass fuels are excluded. Any emissions associated with natural gas for alternatively fueled vehicles (''AFVs'') (or any other alternative fuel defined at 42 U.S.C. 13211 that is provided at a Federal building) is excluded. For buildings with manufacturing or industrial process loads, such process loads shall be accounted for in the analysis for the building's fossil fuel consumption and GHG emissions, but the process loads are not subject to the phase down targets.

Floor Area is the floor area of the structure that is enclosed by exterior walls, including finished or unfinished basements, finished or heated space in attics, and garages if they have an uninsulated wall in common with the house. Not included are crawl spaces, and sheds and other buildings that are not attached to the house.

§ 435.202 Petition for downward adjustment.

(a) *New Federal buildings major renovations of all Scope 1 fossil fuel-using systems, and major renovations of a Scope 1 fossil fuel-using building system or component in an EISA-subject building.* (1) Upon petition by a Federal agency, the Director of FEMP may adjust the applicable maximum allowable Scope 1 fossil fuel energy consumption standard with respect to a specific building, upon written certification from the

head of the agency designing the building, that the requested adjustment is the largest feasible reduction in Scope 1 fossil fuel energy consumption that can practicably be achieved in light of the specified functional needs for that building, as demonstrated by:

(i) A statement from the Head of the Agency or their designee requesting the petition for downward adjustment for the building or renovation, that the building or renovation reduces consumption of Scope 1 fossil fuel energy consumption in accordance with the applicable energy performance standard to the maximum extent practicable and that each fossil fuel using product included in the proposed building that is of a product category covered by the ENERGY STAR program or FEMP for designated products is an ENERGY STAR product or a product meeting the FEMP designation criteria, as applicable;

(ii) A description of the systems, technologies, and practices that were evaluated and unable to meet the required fossil fuel reduction including a justification of why achieving the Scope 1 fossil fuel-based energy consumption targets would be technically impracticable; and

(iii) Any other information the agency determines would help explain its request.

(2) The head of the agency designing the building, or their designee, must also include the following information in the petition:

(i) A general description of the building or major renovation, including but not limited to location, use type, floor area, stories, expected number of occupants and occupant schedule, project type, project cost, and functional needs, mission critical activity, research, and national security operations as applicable;

(ii) The maximum allowable Scope 1 fossil fuel energy consumption for the building from paragraphs (c) or (d) of this section;

(iii) The estimated Scope 1 fossil fuel energy consumption of the proposed building; and

(iv) A description of the proposed building's energy-related features, such as:

(A) HVAC system or component type and configuration;

(B) HVAC equipment sizes and efficiencies;

(C) Ventilation systems or components (including outdoor air volume, controls technique, heat recovery systems, and economizers, if applicable);

(D) Service water heating system or component configuration and equipment (including solar hot water, wastewater heat recovery, and controls for circulating hot water systems, if applicable);

(E) Estimated industrial process loads; and

(F) Any other on-site fossil fuel using equipment.

(3) (i) Agencies may file one petition for a project with multiple buildings if the buildings are

(A) Of the same building, building system, or component type and of similar size and location;

(B) Are being designed and constructed to the same set of targets for fossil fuel-generated energy consumption reduction; and

(C) Would require similar measures to reduce fossil fuel-generated energy consumption and similar adjustment to the numeric reduction requirement.

(ii) The bundled petition must include the information in section (a) that pertains to all buildings, building systems or components included in the petition and an additional description of the differences between each of the buildings, building systems or components. The agency is only required to show work for adjustment once.

(4) Petitions for downward adjustment should be submitted to *cerpetition@hq.doe.gov*, or to:

U.S. Department of Energy, FEMP, Director, Clean Energy Reduction Petitions, EE–5F, 1000 Independence Ave. SW, Washington, DC 20585–0121.

(5) The Director will make a best effort to notify the requesting agency in writing whether the petition for downward adjustment to the numeric reduction requirement is approved or rejected, in 30 calendar days of submittal of a complete petition. If the Director rejects the petition or establishes a value other than that presented in the petition, the Director will forward the

reasons for rejection to the petitioning agency.

(b) *Exclusions.* The General Services Administration (GSA) may not submit petitions under paragraphs (a) of this section. Agencies that are tenants of GSA buildings for which the agency, not GSA, has significant design control may submit petitions in accordance with this section.

APPENDIX A TO SUBPART B OF PART 435 MAXIMUM ALLOWABLE FOSSIL FUEL GENERATED ENERGY CONSUMPTION

(a) For purposes of the tables in this appendix, the climate zones are listed in the performance standards required by §435.4(a)(4)(i).

(b) For purpose of appendix A, the following definitions apply:

(1) *Mobile Home* means a dwelling unit built to the Federal Manufactured Home Construction and Safety Standards in 24 CFR part 3280, that is built on a permanent chassis and moved to a site. It may be placed on a permanent or temporary foundation and may contain one or more rooms.

(2) *Multi-Family in 2–4 Unit Buildings* means a category of structures that is divided into living quarters for two, three, or four families or households in which one household lives above or beside another. This category also includes houses originally intended for occupancy by one family (or for some other use) that have since been converted to separate dwellings for two to four families.

(3) *Multi-Family in 5 or More Unit Buildings* means a category of structures that contain living quarters for five or more households or families and in which one household lives above or beside another.

(4) *Single-Family Attached* means a building with two or more connected dwelling units, generally with a shared wall, each providing living space for one household or family. Attached houses are considered single-family houses as long as they are not divided into more than one dwelling unit and they have independent outside entrances. A single-family house is contained within walls extending from the basement (or the ground floor, if there is no basement) to the roof. Townhouses, row houses, and duplexes are considered single-family attached dwelling units, as long as there is no dwelling unit above or below another.

(5) *Single-Family Detached* means a separate, unconnected dwelling unit, not sharing a wall with any other building or dwelling unit, which provides living space for one household or family. A single-family house is contained within walls extending from the basement (or the ground floor, if there is no basement) to the roof. This includes modular homes but does not include mobile homes.

Table A-1a – FY 2020-FY 2024 Maximum Allowable Fossil Fuel-Generated Energy Consumption by Building Category, Building Type and Climate Zone, Residential Buildings (CO_2e/yr-sqft)

Building Category	Climate Zone:	0A	0B	1A	1B	2A	2B	3A	3B	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
	Building Activity/ Type	Fossil Fuel-Generated Energy Use Intensity (CO_2e/yr-sqft)																		
Residential	Mobile	0.66	0.67	0.68	0.73	0.80	0.78	0.92	0.76	0.87	0.92	1.07	1.05	1.06	1.23	1.19	1.11	1.36	1.36	1.51
Residential	Single-family detached	0.40	0.41	0.41	0.45	0.50	0.48	0.58	0.47	0.55	0.58	0.69	0.67	0.68	0.79	0.76	0.71	0.88	0.88	0.99
Residential	Single-family attached	0.76	0.76	0.77	0.78	0.80	0.79	0.83	0.79	0.82	0.83	0.87	0.87	0.87	0.92	0.90	0.88	0.95	0.95	0.99
Residential	Multi-family (in 2-4 unit building)	0.56	0.57	0.61	0.74	0.93	0.87	1.25	0.83	1.11	1.25	1.64	1.58	1.62	2.06	1.95	1.74	2.40	2.41	2.82
Residential	Multi-family (in 5+ unit building)	0.24	0.25	0.29	0.42	0.61	0.55	0.93	0.51	0.80	0.93	1.32	1.26	1.30	1.74	1.63	1.42	2.08	2.09	2.50

Table A-1b – FY 2020-FY 2024 Maximum Allowable Fossil Fuel-Generated Energy Consumption by Building Category, Building Type and Climate Zone, Residential Buildings (source kBtu/yr-sqft)

Building Category	Climate Zone:	0A	0B	1A	1B	2A	2B	3A	3B	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
	Building Activity/ Type	Fossil Fuel-Generated Energy Use Intensity (site kBtu/yr-sqft)																		
Residential	Mobile	6	6	6	7	7	7	8	7	8	8	10	10	10	11	11	10	12	12	14
Residential	Single-family detached	4	4	4	4	5	4	5	4	5	5	6	6	6	7	7	6	8	8	9
Residential	Single-family attached	7	7	7	7	7	7	8	7	7	8	8	8	8	8	8	8	9	9	9
Residential	Multi-family (in 2-4 unit building)	5	5	6	7	8	8	11	8	10	11	15	14	15	19	18	16	22	22	26
Residential	Multi-family (in 5+ unit building)	2	2	3	4	6	5	8	5	7	8	12	11	12	16	15	13	19	19	23

Table A-2a – FY 2025-FY 2029 Maximum Allowable Fossil Fuel-Generated Energy Consumption by Building Category, Building Type and Climate Zone, Residential Buildings (CO_2e/yr-sqft)

Building Category	Climate Zone:	0A	0B	1A	1B	2A	2B	3A	3B	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
	Building Activity/ Type	Fossil Fuel-Generated Energy Use Intensity (CO_2e/yr-sqft)																		
Residential	Mobile	0.33	0.34	0.37	0.40	0.39	0.46	0.38	0.44	0.46	0.54	0.52	0.53	0.62	0.59	0.55	0.68	0.68	0.76	0.33
Residential	Single-family detached	0.20	0.21	0.22	0.25	0.24	0.29	0.24	0.27	0.29	0.34	0.33	0.34	0.40	0.38	0.35	0.44	0.44	0.50	0.20
Residential	Single-family attached	0.38	0.38	0.39	0.40	0.40	0.42	0.39	0.41	0.42	0.44	0.43	0.44	0.46	0.45	0.44	0.47	0.48	0.50	0.38
Residential	Multi-family (in 2-4 unit building)	0.28	0.30	0.37	0.46	0.44	0.62	0.41	0.56	0.63	0.82	0.79	0.81	1.03	0.97	0.87	1.20	1.20	1.41	0.28
Residential	Multi-family (in 5+ unit building)	0.13	0.14	0.21	0.30	0.28	0.46	0.25	0.40	0.47	0.66	0.63	0.65	0.87	0.81	0.71	1.04	1.04	1.25	0.13

Table A-2b – FY 2025-FY 2029 Maximum Allowable Fossil Fuel-Generated Energy Consumption by Building Category, Building Type and Climate Zone, Residential Buildings (source kBtu/yr-sqft)

Building Category	Climate Zone:	0A	0B	1A	1B	2A	2B	3A	3B	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
	Building Activity/ Type	Fossil Fuel-Generated Energy Use Intensity (site kBtu/yr-sqft)																		
Residential	Mobile	3	3	3	3	4	4	4	3	4	4	5	5	5	6	5	5	6	6	7
Residential	Single-family detached	2	2	2	2	2	2	3	2	2	3	3	3	3	4	3	3	4	4	4
Residential	Single-family attached	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	5
Residential	Multi-family (in 2-4 unit building)	3	3	3	3	4	4	6	4	5	6	7	7	7	9	9	8	11	11	13
Residential	Multi-family (in 5+ unit building)	1	1	1	2	3	3	4	2	4	4	6	6	6	8	7	6	9	9	11

Subpart C—Green Building Certification for Federal Buildings

§ 435.300 Green building certification.

(a) If a Federal agency chooses to use a green building certification system to certify a new Federal building or a Federal building undergoing a major renovation and construction costs for such new building or major renovation are at least $2,500,000 (in 2007 dollars, adjusted for inflation), and design for construction began on or after October 14, 2015:

(b) The system under which the building is certified must:

(1) Allow assessors and auditors to independently verify the criteria and measurement metrics of the system;

(2) Be developed by a certification organization that

(i) Provides an opportunity for public comment on the system; and

(ii) Provides an opportunity for development and revision of the system through a consensus-based process;

(3) Be nationally recognized within the building industry;

(4) Be subject to periodic evaluation and assessment of the environmental and energy benefits that result under the rating system; and

(5) Include a verification system for post occupancy assessment of the rated buildings to demonstrate continued energy and water savings at least every four years after initial occupancy.

(c) *Certification level.* The building must be certified to a level that promotes the high performance sustainable building guidelines referenced in Executive Order 13423 ''Strengthening Federal Environmental, Energy, and Transportation Management'' and Executive Order 13514 ''Federal Leadership in Environmental, Energy and Economic Performance.''

[79 FR 61571, Oct. 14, 2014]

Subpart D—Voluntary Performance Standards for New Non-Federal Residential Buildings [Reserved]

Subpart E—Mandatory Energy Efficiency Standards for Federal Residential Buildings

§ 435.500 Purpose.

(a) This subpart establishes voluntary energy conservation performance standards for new residential buildings. The voluntary energy conservation performance standards are designed to achieve the maximum practicable improvements in energy efficiency and increases in the use of non-depletable sources of energy.

(b) Voluntary energy conservation performance standards prescribed under this subpart shall be developed solely as guidelines for the purpose of providing technical assistance for the design of energy conserving buildings, and shall be mandatory only for the Federal buildings for which design for construction began before January 3, 2007.

(c) The energy conservation performance standards will direct Federal policies and practices to ensure that cost-effective energy conservation features will be incorporated into the designs of all new Federal residential buildings for which design for construction began January 3, 2007.

[53 FR 32545, Aug. 25, 1988, as amended at 71 FR 70284, Dec. 4, 2006. Redesignated at 79 FR 61571, Oct. 14, 2014]

§ 435.501 Scope.

(a) The energy conservation performance standards in this subpart will apply to all Federal residential buildings for which design of construction began before January 3, 2007 except multifamily buildings more than three stories above grade.

(b) The primary types of buildings built by or for the Federal agencies, to which the energy conservation performance standards will apply, are:

(1) Single-story single-family residences;

(2) Split-level single-family residences;

(3) Two-story single-family residences;

(4) End-unit townhouses;

(5) Middle-unit townhouses;

(6) End-units in multifamily buildings (of three stories above grade or less);

(7) Middle-units in multifamily buildings (of three stories above grade or less);

(8) Single-section mobile homes; and

(9) Multi-section mobile homes.

[53 FR 32545, Aug. 25, 1988, as amended at 71 FR 70284, Dec. 4, 2006. Redesignated at 79 FR 61571, Oct. 14, 2014]

§ 435.502 Definitions.

(a) *ANSI* means American National Standards Institute.

(b) *ASHRAE Handbook* means American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., ASHRAE Handbook, 1985 Fundamentals. Volume, 1–P Edition.

(c) *ASTM* means American Society of Testing and Measurement.

(d) *British thermal unit (Btu)* means approximately the amount of heat required to raise the temperature of one pound of water from 59 °F to 60 °F.

(e) *Building* means any new residential structure:

(1) That includes or will include a heating or cooling system, or both, or a domestic hot water system, and

(2) For which a building design is created after the effective date of this rule.

(f) *Building design* means the development of plans and specifications for human living space.

(g) *Conservation Optimization Standard for Savings in Federal Residences* means the computerized calculation procedure that is used to establish an energy consumption goal for the design of Federal residential buildings.

(h) *COSTSAFR* means the Conservation Optimization Standard for Savings in Federal Residences.

(i) *DOE* means U.S. Department of Energy.

(j) *Domestic hot water (DHW)* means the supply of hot water for purposes other than space conditioning.

(k) *Energy conservation measure (ECM)* means a building material or component whose use will affect the energy consumed for space heating, space cooling, domestic hot water or refrigeration.

(l) *Energy performance standard* means an energy consumption goal or goals to be met without specification of the method, materials, and processes to be employed in achieving that goal or goals, but including statements of the requirements, criteria evaluation methods to be used, and any necessary commentary.

(m) *Federal agency* means any department, agency, corporation, or other entity or instrumentality of the executive branch of the Federal Government, including the United States Postal Service, the Federal National Mortgage Association, and the Federal Home Loan Mortgage Corporation.

(n) *Federal residential building* means any residential building to be constructed by or for the use of any Federal agency in the Continental U.S., Alaska, or Hawaii that is not legally subject to state or local building codes or similar requirements.

(o) *Life cycle cost* means the minimum life cycle cost calculated by using a methodology specified in subpart A of 10 CFR part 436.

(p) *Point system* means the tables that display the effect of the set of energy conservation measures on the design energy consumption and energy costs of a residential building for a particular location, building type and fuel type.

(q) *Practicable optimum life cycle energy cost* means the energy costs of the set of conservation measures that has the minimum life cycle cost to the Federal government incurred during a 25 year period and including the costs of construction, maintenance, operation, and replacement.

(r) *Project* means the group of one or more Federal residential buildings to be built at a specific geographic location that are included by a Federal agency in specifications issued or used by a Federal agency for design or construction of the buildings.

(s) *Prototype* means a fundamental house design based on typical construction assumptions. The nine prototypes in COSTSAFR are: single-section manufactured house, double-section manufactured house, ranch-style house, two-story house, split-level house, mid-unit apartment, end-unit apartment, mid-unit townhouse, end-unit townhouse.

(t) *Residential building* means a new building that is designed to be constructed and developed for residential occupancy.

(u) *Set of conservation options* means the combination of envelope design and equipment measures that influences the long term energy use in a building designed to maintain a minimum of ventilation level of 0.7 air changes per hour, including the heating and cooling equipment, domestic hot water equipment, glazing, insulation, refrigerators and air infiltration control measures.

(v) *Shading coefficient* means the ratio of the heat gains through windows, with or without integral shading devices, to that occurring through unshaded, ⅛-inch clear glass.

(w) *Total annual coil load* means the energy for space heating and/or cooling with no adjustment for HVAC equipment efficiency.

[56 FR 3772, Jan. 31, 1991, redesignated at 79 FR 61571, Oct. 14, 2014]

§ 435.503 Requirements for the design of a Federal residential building.

(a) The head of each Federal agency responsible for the construction of Federal residential buildings shall establish an energy consumption goal for each residential building to be designed or constructed by or for the agency, for which design for construction began before January 3, 2007.

(b) The energy consumption goal for a Federal residential building for which design for construction began before January 3, 2007, shall be a total point score derived by using the microcomputer program and user manual entitled ''Conservation Optimization Standard for Savings in Federal Residences (COSTSAFR),'' unless the head of the Federal agency shall establish more stringent requirements for that agency.

(c) The head of each Federal agency shall adopt such procedures as may be necessary to ensure that the design of a Federal residential building is not less energy conserving than the energy consumption goal established for the building.

[53 FR 32545, Aug. 25, 1988, as amended at 71 FR 70284, Dec. 4, 2006. Redesignated at 79 FR 61571, Oct. 14, 2014]

§ 435.504 The COSTSAFR Program.

(a) The COSTSAFR Program (Version 3.0) provides a computerized calculation procedure to determine the most effective set of energy conservation measures, selected from among the measures included within the Program that will produce the practicable optimum life cycle cost for a type of residential building in a specific geographic location. The most effective set of energy conservation measures is expressed as a total point score that serves as the energy consumption goal.

(b) The COSTSAFR Program (Version 3.0) also prints out a point system that identifies a wide array of different energy conservation measures indicating how many points various levels of each measure would contribute to reaching the total point score of the energy consumption goal. This enables a Federal agency to use the energy consumption goal and the point system in the design and procurement procedures so that designers and builders can pick and choose among different combinations of energy conservation measures to meet or exceed the total point score required to meet the energy consumption goal.

(c) The COSTSAFR Program (Version 3.0) operates on a micro-computer system that uses the MS DOS operating system and is equipped with an 8087 coprocessor.

(d) The COSTSAFR Program (Version 3.0) may be obtained from:

National Technical Information Service; Department of Commerce; Springfield, Virginia 22161; (202) 487-4600

[53 FR 32545, Aug. 25, 1988, as amended at 56 FR 3772, Jan. 31, 1991. Redesignated at 79 FR 61571, Oct. 14, 2014]

§ 435.505 Alternative compliance procedure.

(a) If a proposed building design includes unusual or innovative energy conservation measures which are not covered by the COSTSAFR program, the Federal agency shall determine whether that design meets or exceeds the applicable energy consumption goal in compliance with the procedures set forth in this section.

(b) The Federal agency shall determine the estimated discounted energy