PART 433—ENERGY EFFICIENCY STANDARDS FOR THE DESIGN AND CONSTRUCTION OF NEW FEDERAL COMMERCIAL AND MULTI-FAMILY HIGH-RISE RESIDENTIAL BUILDINGS

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SOURCE: 71 FR 70281, Dec. 4, 2006, unless otherwise noted.

§ 433.1 Purpose and scope.
This part establishes an energy efficiency performance standard for the new Federal commercial and multi-family high-rise buildings, for which design for construction began on or after January 3, 2007, as required by section 305(a) of the Energy Conservation and Production Act, as amended (42 U.S.C. 6834(a)).

§ 433.2 Definitions.

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

ANSI means the American National Standards Institute.
ASHRAE means the American Society of Heating, Refrigerating and Air Conditioning Engineers.

Baseline building means a building that is otherwise identical to the proposed building but is designed to meet but not exceed the energy efficiency specifications of ANSI/ASHRAE/IESNA Standard 90.1-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings, January 2004 (incorporated by reference, see §433.3).

Commercial and multi-family high-rise residential building means all buildings other than low-rise residential buildings.

DOE means the U.S. Department of Energy.


IESNA means Illuminating Engineering Society of North America.

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 436.20, 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).

New Federal building means any building to be constructed by, or for the use of, any Federal agency which is not legally subject to State or local building codes or similar requirements.

Proposed building means the building design of a new Federal commercial and multi-family high-rise building proposed for construction.

EFFECTIVE DATE NOTE: At 72 FR 72570, Dec. 21, 2007, §433.2 was amended by adding in alphabetical order definitions of “Design for construction,” “Process load” and “Receptacle load” and revise the definition of “New Federal building”, effective Jan. 22, 2008. For the convenience of the user, the added and revised text is set forth as follows:

§ 433.2 Definitions.

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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.

New Federal building means any building to be constructed on a site that previously did not have a building or a complete replacement of an existing building from the foundation up, by, or for the use of, any Federal agency which is not legally subject to State or local building codes or similar requirements.

Process load means the load on a building resulting from energy consumed in support of a manufacturing, industrial, or commercial process. Process loads do not include energy consumed maintaining comfort and amenities for the occupants of the building (including space conditioning for human comfort).

Receptacle load means the load on a building resulting from energy consumed by any equipment plugged into electrical outlets.

§ 433.3 Materials incorporated by reference.

(a) General. DOE incorporates by reference the energy performance standard listed in paragraph (b) of this section into 10 CFR part 433. The Director of the Federal Register has approved the material listed in paragraph (b) of this section for incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Any subsequent amendment to this material by the standard-setting organization will not affect the DOE building energy performance standard unless and until DOE amends its building energy performance standards. DOE incorporates the material as it exists on the date specified in the approval and a notice of any change in the material will be published in the FEDERAL REGISTER.


(c) Availability of references. The building energy performance standard incorporated by reference is available for inspection at:

(1) National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html

(2) U.S. Department of Energy, Forrestal Building, Room JM-048 (Resource Room of the Federal Energy Management Program), 1000 Independence Avenue, S.W., Washington, DC 20585-0121, (202) 586-9138, between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays.


§ 433.4 Energy efficiency performance standard.

(a) All Federal agencies shall design new Federal commercial and multi-family high-rise residential buildings, for which design for construction began on or after January 3, 2007, to:

(1) Meet ANSI/ASHRAE/IESNA Standard 90.1-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings, January 2004 (incorporated by reference, see 433.3); and

(2) 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 baseline building.

(b) Energy consumption for the purposes of calculating the 30 percent savings shall include space heating, space cooling, ventilation, service water heating, lighting, and all other energy consuming systems normally specified as part of the building design except for receptacle and process loads.

(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
§ 433.5 Performance level determination.
(a) Each Federal agency shall determine energy consumption levels for both the baseline building and proposed building by using the Performance Rating Method found in Appendix G of ANSI/ASHRAE/IESNA Standard 90.1-2004, Energy Standard for Buildings Except Low-Rise Residential Buildings, January 2004 (incorporated by reference, see (433.3), except the formula for calculating the Performance Rating in paragraph G1.2 shall read as follows:

Percentage improvement = 100 x (Baseline building consumption—Proposed building consumption)/ (Baseline building consumption—Receptacle and process loads).

(b) Each Federal agency shall consider laboratory fume hoods and kitchen ventilation systems as part of the ASHRAE-covered HVAC loads subject to the 30 percent savings requirements, rather than as process loads.

§ 433.6 Sustainable principles for siting, design and construction. [Reserved]

§ 433.7 Water used to achieve energy efficiency. [Reserved]

§ 433.8 Life-cycle costing.
Each Federal agency shall determine life-cycle cost-effectiveness by using the procedures set out in subpart A of 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.”