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12.6 *The Simulation Tool*

12.6.1 The criteria established in section 11.0 for the selection of a simulation tool shall be followed when using the compliance path prescribed in section 12.0.

12.7 *Life Cycle Cost Analysis Criteria*

12.7.1 The following life cycle cost criteria applies to the fuel selection requirements of this chapter and to option life cycle cost analyses performed to evaluate energy conservation design alternatives. The fuel source(s) selection shall be made in accordance with the requirements of subpart A of 10 CFR part 436. The implementation calculations for the methodology of subpart A of 10 CFR part 436 is provided in *National Bureau of Standards Handbook 135* entitled "Life Cycle Cost Manual for the Federal Energy Management Program." When performing life cycle cost analyses of optional energy conservation opportunities the designer may use the life cycle cost procedures of *subpart A of 10 CFR part 436* or *OMB Circular A-94* or an equivalent procedure that meets the assumptions listed below:

12.7.1.1 The economic life of the Prototype Building and Proposed Design shall be 25 years. Anticipated replacements or renovations of energy related features and systems in the Prototype or Reference Building and Proposed Design during this period shall be included in their respective life cycle cost calculations.

12.7.1.2 The designer shall follow established professional cost estimating practices when determining the costs and benefits associated with the energy related features of the Prototype or Reference Building and Proposed Design.

12.7.1.3 All costs shall be expressed in current dollars. General inflation shall be disregarded. Differential escalation of prices (prices estimated to rise faster or slower than general inflation) for the energy used in the life cycle cost calculations shall be those in effect at the time of the life cycle cost calculations as published by the Department of Energy's Energy Information Administration.

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12.7.1.4 The economic effects of taxes, depreciation and other factors not consistent with the practices of *subpart A of 10 CFR part 436* shall not be included in the life cycle cost calculation.

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

Subpart C—Mandatory Performance Standards for New Federal Residential Buildings

§ 435.300 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 design of Federal buildings.

(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 residential buildings designed and constructed by and for Federal agencies.

§ 435.301 Scope.

(a) The energy conservation performance standards for new Federal residential buildings will apply to the design of all new residential buildings 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;

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- (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.

§ 435.302 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.