[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Parts 433 and 435

[Docket No.: EERE-2011-BT-STD-0005]

RIN 1904-AC41

Energy Efficiency Design Standards for New Federal Commercial and Multi-Family High-Rise Residential Buildings and New Federal Low-Rise Residential Buildings

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy

ACTION: Finding of No Significant Impact

SUMMARY: Section 305(a) of the Energy Conservation and Production Act (ECPA) requires that the Department of Energy (DOE) establish by rule Federal building energy efficiency standards for all Federal commercial and high-rise multi-family residential buildings and low-rise residential buildings. EPCA requires DOE to establish by rule revised Federal building energy efficiency performance standards. (42 U.S.C. 6834(a)(3)(A)) This rulemaking updates the current rule for commercial and high-rise multi-family residential buildings, 10 CFR 433 "Energy Efficiency Standards for New Federal Commercial and High-Rise Multi-Family Residential Buildings," to replace ASHRAE Standard 90.1-2004 with the more stringent ASHRAE Standard 90.1-2007, incorporated by reference. With regard to low-rise residential buildings, this rulemaking

updates 10 CFR 435 Subpart A, "Energy Efficiency Standards for New Federal Residential Low-Rise Residential Buildings," to replace the International Energy Conservation Code (IECC) 2004 by the more stringent IECC 2009, incorporated by reference. Today's final rule makes no other changes to the Federal Building Energy Efficiency and Sustainable Design Standards. Based on an Environmental Assessment (EA), DOE has determined that revising the Federal building energy efficiency standards to ASHRAE 90.1-2007 and IECC 2009 would not be a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969 (NEPA). Therefore, an environmental impact statement (EIS) is not required, and DOE is issuing this Finding of No Significant Impact (FONSI).

ADDRESSES: Public Availability: Copies of the final rule are available from the U.S. Department of Energy, Resource Room of the Building Technologies Program, 950 L'Enfant Plaza, SW., 6th Floor, Washington, DC 20024, (202) 586-2945, between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Ms. Margo Appel, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, Mailstop EE-2J, 1000 Independence Avenue, SW, Washington, DC 20585, (202) 586-9495, e-mail: Margo.Appel@ee.doe.gov, or Ms. Ami Grace-Tardy, Esq., U.S. Department of Energy, Office of the General Counsel, Forrestal Building, GC-71, 1000

Independence Avenue, SW, Washington, DC 20585, (202) 586-5709, e-mail: Ami.Grace-Tardy@hq.doe.gov.

For further information regarding the DOE NEPA process contact: Carol M. Borgstrom, Director, Office of NEPA Policy and Compliance (GC-20), U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586-4600, or leave a message at (800) 472-2756. Additional information regarding DOE NEPA activities and access to many DOE NEPA documents are available on the Internet through the DOE NEPA website at: http://www.gc.energy.gov/nepa/.

SUPPLEMENTARY INFORMATION:

Description of the Proposed Action: The DOE is publishing this final rule to implement provisions in the Energy Conservation and Production Act (ECPA) that require DOE to update the baseline Federal energy efficiency performance standards for the construction of new Federal buildings, including commercial and multi-family high-rise residential buildings and low-rise residential buildings. This rule updates the baseline Federal commercial standard to the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 90.1-2007. This rule updates the baseline Federal residential standard to the 2009 International Energy Conservation Code (IECC).

Environmental Impacts:

Building Habitability (Indoor Air) Impacts

The rule does not change mechanical ventilation rates or affect sources of indoor air pollutants from the no-action alternative. For commercial and high-rise multi-family residential buildings, ASHRAE Standard 90.1-2007 does not require specific mechanical ventilation rates and the rule does not require any changes in mechanical ventilation rates. The rule contains essentially the same requirements for sealing of the building envelope that have been in all previous versions of ASHRAE Standard 90.1. Accordingly, indoor air pollutant levels are not expected to increase under the Final Rule. For residential buildings, the changes between the codes do not affect sources of indoor emissions. This expectation does not imply that the potential for health-related problems in new Federal buildings does not exist. All buildings, regardless of energy efficiency codes, have some potential for indoor air quality-related health problems, such as "sick-building syndrome." Sick-building syndrome can result from insufficient building air exchange. For example, if the ventilation system that brings in fresh outside air breaks down, the air will become stale and occupants in the building may get sick.

Outdoor Air Environmental Impacts

For all new Federal buildings, the rule is expected to reduce outdoor emissions primarily by reducing consumption of fossil fuels. The reduction in the amount of energy that would otherwise be consumed by these buildings under the Final Rule depends on the cost-effective level of energy efficiency achieved by the agencies. For purposes of this EA, DOE considers new construction that meets ASHRAE Standard 90.1-2007, as well as construction that exceeds the Standard by 10 percent, 20 percent, 30 percent, 40 percent, and 50 percent. DOE then compares the energy consumption of these six levels

to ASHRAE Standard 90.1-2004. Although 90.1-2004 was the minimum requirement, buildings were also required to exceed the Standard by up to 30% if life-cycle cost-effective, so the Final Rule was compared to an energy efficiency level 30% better than 90.1-2004 as well.

Assuming that new Federal buildings meet but do not exceed the new minimum requirement and that buildings would have otherwise met but not exceeded the existing requirement, carbon dioxide emissions avoided (relative to a building meeting minimum requirements of the previous standard, ASHRAE Standard 90.1-2004) are expected to be 6,200 metric tons. This emission reduction is for the first year the Final Rule is in effect, with the savings compounding in future years as more Federal construction occurs. The 6,200 metric tons of savings compare to 5,835 million metric tons of total carbon dioxide emissions for the U.S. in 2004 (DOE 2009), or only one ten-thousandth of one percent of the national total. Methane emissions avoided are expected to be 24 metric tons in the first year the Final Rule is in effect. Nitrogen oxide emissions avoided are expected to be 6 metric tons in the first year the rule is in effect, while the sulfur dioxide emissions avoided are expected to be 14 metric tons.

For low-rise residential buildings subject to the requirement of the Final Rule, the Federal government is estimated to construct about 2000 housing units annually. (See Section 5.2.2 for an explanation of this estimate.) Similar to the commercial rule, energy savings of the minimum requirement as well as 10 percent, 20 percent, 30 percent, 40 percent, and 50 percent below the energy consumption level of the new baseline code

(the 2009 IECC) are examined here. These consumption levels are compared to the existing minimum requirement, the 2004 IECC, as well as a consumption level 30 percent below the 2004 IECC. Assuming that buildings meet the minimum requirements in the 2009 IECC, carbon dioxide emissions avoided (relative to a buildings meeting minimum requirements in the 2004 IECC) are expected to be 3,600 metric tons in the first year. Avoided methane emissions are expected to equal 22 metric tons in the first year. Avoided nitrogen oxide emissions are expected to be about 1 ton in the first year the rule is in effect and avoided sulfur dioxide emissions are expected to be 2 tons.

Other Impacts

The Final Rule is not expected to cause any adverse health effects, and thus would have no environmental justice impacts affecting low-income or minority populations. The Final Rule is not expected to have any adverse impacts on sensitive environmental resources, such as wetlands, endangered species, or historic or archaeological sites, and would not be affected by a terrorist act.

Determination

Based upon the EA, DOE has determined that revising the Federal building energy efficiency standards to ASHRAE 90.1-2007 and IECC 2009 would not be a major Federal action significantly affecting the quality of the human environment within the meaning of (NEPA). Therefore, an environmental impact statement (EIS) is not required, and DOE is issuing this (FONSI).

Issued in Washington, DC, on July 13, 2011.

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Office of Technology Development
Energy Efficiency and Renewable Energy