

RULEMAKING TITLE: Energy Conservation Standards for New Federal Commercial and Multi-Family High-Rise Residential Buildings and New Federal Low-Rise Residential Buildings

DOCKET NUMBER: EE-RM/STD-02-112

CLOSING DATE: 02/02/2007

COMMENT NUMBER	DATE RECEIVED /DATE OF LETTER	NAME & TITLE OF COMMENTATOR	AFFILIATION & ADDRESS OF COMMENTATOR
1	01/31/07 01/31/07	Thomas D. Culp, Ph.D Consultant	Birch Point Consulting LLC W6025 Rim of the City Road La Cross, WI 54601
2	02/01/07 02/01/07	Renee LaMura Director of Member Services	Polyisocyanurate Insulation Manufacturers Association (PIMA) 7315 Wisconsin Ave., Suite 400E Bethesda, MD, 20814
3	02/01/07 02/01/07	Rick L. Landers Business Manager	Office of the Chief Engineer Capital Improvements Business Links Naval Facilities Engineering Command
4	02/01/07 02/01/07	Ken Brenden Code and Industry Affairs Manager	American Architectural Manufacturers Association (AAMA) 1827 Walden Office Square, Suite 550 Schaumburg, IL 60173
5	02/01/07 02/01/07	Thomas Zaremba	Pilkington North America, Inc.
6	02/01/07 02/01/07	Tobin Oruch Engineering Standards Manager	Los Alamos National Laboratory
7	02/02/07 02/02/07	Jean Lupinacci Chief, ENERGY STAR Commercial and Industrial Branch	U.S. Environmental Protection Laboratory US EPA 6202J Washington DC 20460
8	02/02/07 02/02/07	James Ranfone Ted Williams Managing Director Director Building Codes and Standards	American Gas Association 400 North Capitol Street, NW Washington, DC 20001

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9	02/02/07 02/02/07	Jeff Harris Vice President for Programs	Alliance to Save Energy 1850 M Street, NW Suite 600 Washington, DC 20036	
10	02/02/07 02/02/07	Paul Mendelson Vice President, Government and Community Relations	The American Institute of Architects 1735 New York Avenue, NW Washington, DC 20006-5292	
11	02/02/07 02/02/07	Eric Lacey Chairman	Responsible Energy Code Alliance 1850 M Street, NW Suite 600 Washington, DC 20036	
12	02/02/07 02/02/07	Mark Halverson	APA – The Engineered Wood Association	
13	02/02/07 02/08/07	Gabe Farkas V.P. Engineering Mark Henderson President Craig Conner (Comments were submitted twice, first under Farkas and Conner, then under Farkas, Henderson, and Conner. Comments will be included in docket only once.)	Icynene Insulation Systems 6747 Campobello Road Mississauga ON L5N 2L7 Canada Building Quality Box 1507 Richland, WA 99352	Nu-Wool Co, Inc 2472 Port Sheldon St Jenison, MI 49428
14	02/02/07 02/02/07	Terry Townsend President	American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc. (ASHRAE) 1791 Tullie Circle, NE Atlanta, GA 30329-2305	



BIRCH POINT
Consulting



ALUMINUM EXTRUDERS COUNCIL

January 29, 2007

Mr. Cyrus Nasser
U.S. Department of Energy
Federal Energy Management Program
Mailstop EE-2L
1000 Independence Avenue, SW.
Washington, DC 20585-0121

COMMENTS REGARDING:

10 CFR Parts 433, 434, and 435

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

**Docket No. EE-RM/STD-02-112
RIN 1904-AB13**

Dear Mr. Nasser,

I represent the Aluminum Extruders Council, whose members are the leading suppliers of metal fenestration systems used in both commercial and residential buildings. In general, we applaud the effort to increase the energy efficiency standards for Federal buildings in 10 CFR Parts 433, 434, and 435, but we would also like to express some concerns.

1. Reference Standard for Low-Rise Residential Buildings

Recommendations:

- **Do not use the 2004 Supplement to the IECC.**
- **Use the 2006 IECC and 2006 IRC as the reference standard(s).**
- **At a minimum, eliminate section 402.5.1 of the 2004 Supplement to the IECC.**

The interim rule uses the 2004 Supplement to the IECC as the base standard for low-rise residential buildings. We are a bit perplexed why the older 2004 Supplement is being used, instead of the 2006 IECC or 2006 IRC. Several problems and highly contentious items were identified in the 2004 Supplement, which were subsequently changed in the 2006 full edition of the code. It makes no sense to use an older version when a more modern and improved version is available.

One specific concern is Section 402.5.1 which was first introduced in the 2004 Supplement and sets flawed "hard limits" for fenestration. This section imposes an absolute cap on fenestration U-value in climate zones 4-8, and an absolute cap on fenestration SHGC in zones 1-3, even when whole building UA or performance alternatives are used to show equivalent total energy use of the overall building. This section saves no energy, but places artificial constraints on individual products.

Section 402.5.1 directly contradicts the intent expressed by DOE in the Federal Register discussion of this interim rule:

“Today’s rule does not take a prescriptive approach as to how the 30 percent reduction is to be obtained. The baseline standards contain a limited set of mandatory requirements, such as sealing leaks in the building envelope and air duct systems. Beyond this, there are no restrictions on how the Federal agency achieves cost-effective energy savings. DOE believes that Federal agencies should be given the flexibility necessary to determine the most effective ways to achieve energy savings above that of the incorporated standards, rather than relying on prescriptive requirements that may not be appropriate in all cases.”

However, section 402.5.1 expressly does create restrictions and limits flexibility for Federal agencies with regards to choice of fenestration products, regardless of overall energy efficiency of the building.

First, it has already been determined that the specific limits in the 2004 Supplement are highly flawed with regards to skylights. The U-value limit of 0.40 in climate zones 4-8 is illogically lower than the prescriptive requirement for skylights (0.60). This serious error was fixed in both the 2006 IECC and 2006 IRC, so using the 2004 Supplement makes no sense.

Second, the U-value limit of 0.40 is the same as the prescriptive value for vertical fenestration in climate zone 4, thus removing the flexibility to use any window trade-off at all in this region. This is counter to the intent of the performance options provided in all building energy codes. Therefore, the 2006 IECC was changed to add flexibility to the zone 4 requirement which is lacking in the 2004 Supplement. This was also one reason the IRC rejected any limits in zones 4-5, and set a higher limit in zones 6-8 in both the 2004 and 2006 editions.

Third, the impact of these hard limits on specialized products such as glass block, garden windows, and hurricane-impact metal windows has been highly debated. If these specialized products do not meet the limits of section 402.5.1, they effectively become “illegal” under this code, even if the whole building has equivalent energy efficiency. Area-weighting does allow a small portion of these products if used in combination with other products, but this portion may not be adequate in some applications, or where only an addition is being constructed. The hard limits also ignore the alternative benefits of specialized products. Glass block is often used for security and fire benefits, and metal framed windows are often required for structural and impact resistance properties in the hurricane zone, which extends all the way up the east coast through zone 5. The artificial restraints created by these limits could even stifle future research into specialized products with alternative benefits.

As a result of these concerns, the 2006 IECC modified the limits in zones 4-5 to at least accommodate some metal-framed hurricane products. The IRC has rejected any limits in zones 4-5, and also set a higher limit in zones 6-8 in both the 2004 and 2006 editions. Going further, the IRC committee recently voted to completely remove these hard limits from the 2007 Supplement.

Debate remains about what hard limits, if any, should be used, but there has been broad agreement that the limits in the 2004 Supplement to the IECC are flawed. It makes no sense to use the 2004 Supplement to the IECC as the reference standard for federal low-rise residential buildings. We recommend using the 2006 IECC and 2006 IRC. At a bare minimum, the rule should provide an exemption to section 402.5.1.

2. Reference Standard for Low-Rise Residential Buildings

Recommendation: Use both the IRC and IECC as the reference standards.

Despite minor differences, there is no basis for considering either the IECC or IRC as a superior code over the other. Furthermore, the IRC is more widely adopted in local jurisdictions than the IECC. Therefore, for consistency, use of either the IRC or IECC should be allowed for demonstrating compliance to this regulation. It should also be noted that only the IRC is consistent with DOE's original proposal regarding hard limits on fenestration properties.

3. Reference Standard for Commercial and High-Rise Multi-Family Residential Buildings

Recommendation: no change.

Much more severe problems were identified in the commercial fenestration requirements in the 2004 Supplement to the IECC. Therefore, we support the decision to use ASHRAE 90.1-2004 as the reference standard for these buildings. We would also support giving the option to use either ASHRAE 90.1-2004 or the 2006 IECC as the reference standard.

Thank you for your consideration, and please contact me at any time if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas D. Culp". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Thomas D. Culp, Ph.D.

W6025 Rim of the City Rd.
La Crosse, WI 54601
608-788-8415
culp@birchpointconsulting.com



February 1, 2007

Mr. Cyrus Nasser
U.S. Department of Energy
Federal Energy Management Program
Mailstop EE-2L
1000 Independence Avenue, SW
Washington DC 20585-0121

Re: Energy Standards for New Federal Commercial and Multi-Family High-Rise Residential Buildings and Energy Standards for New Federal Low-Rise Residential Buildings, EE-RM/STD-02-112 and/or RIN 1904-AB13

Dear Sir:

The Polyisocyanurate Insulation Manufacturers Association (PIMA) appreciates the opportunity to comment on the Federal building energy standards promulgated by your Department on December 4, 2006. Building energy codes are important to the spread of basic or minimum energy-efficient construction practices. Codes are essentially the floor, a level that everyone can meet with little or no extra effort, so we are pleased to see the Department move forward with this final rule that requires at least a 30% improvement over code for federal buildings. However, we encourage the Department of Energy to develop a process for quickly updating the Federal standards following major improvements to the ASHRAE 90.1 and IECC standards.

PIMA is the trade association for manufacturers of rigid polyiso foam insulation, a product that is used in over 60 percent of new commercial roof construction, in 30 percent of the new residential construction that uses insulated sheathing, and in most re-insulation of existing commercial building roofs. PIMA members have a nationwide presence with 31 polyiso manufacturing facilities in 16 states and Canada. PIMA and its members are strong supporters of federal programs and policies that promote cost-effective improvements in the energy efficiency of buildings, both residential and commercial.

The interim final rule adopts by reference ASHRAE 90.1-2004 for commercial buildings and high-rise residential buildings and the 2004 IECC for low-rise residential buildings and directs federal agencies to exceed these standards by 30% or more, if it is life-cycle cost effective. The authority for this interim final rule, section 109 of the Energy Policy Act of 2005 (P.L. 109-58, August 8, 2005, 119 Stat. 614), also requires DOE to consider revising the building standards within one year following revisions to either the ASHRAE or IECC standards. PIMA strongly encourages DOE to keep this requirement in mind when it plans its budget for the next fiscal year and to have in place a simple and quick process for updating these standards to keep them current. The preamble to the December 4th Interim Final Rule makes no mention of this requirement. We hope this absence is not an indication that the Department is not going to take any further steps to improve these standards over time.

7315 Wisconsin Avenue
Suite 400E
Bethesda, Maryland 20814

t 301.654.0000
f 301.951.8401
www.polyiso.org



ASHRAE has committed to improving the stringency of the 90.1 standard as part of its larger sustainability efforts. In August of 2006, the President of ASHRAE, Terry Townsend, endorsed the goal of making the 2010 version of 90.1 at least 30% more stringent than the 2004 version and ASHRAE has already formed an ad hoc committee (WG 2010) to develop approaches to achieve this goal. This committee also intends to improve the format and usability of 90.1 and to streamline its structure (see <http://www.ashrae.org/aboutus/page/30>).

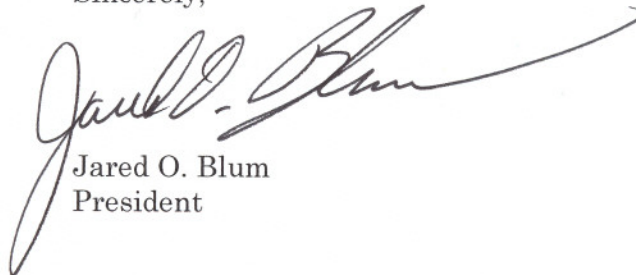
Also, the design community would benefit a great deal by having access to a comprehensive database of the specific energy-efficiency features that are contained in energy-efficient buildings (*i.e.*, buildings that are at least 30% more energy efficient than buildings built to code). This database could start with federal buildings and eventually include private buildings on a voluntary basis. In general, the information currently available only focuses on selected high profile building features, such as day lighting or green roofs, and does not give a complete and comprehensive picture of all of a building's energy-efficiency attributes. This database could be constructed as part of a tracking effort to ensure that agencies actually comply with the federal building standards.

PIMA also urges the Department to budget sufficient funds for the training and outreach necessary to ensure that relevant federal officials and their design contractors are aware of the new Federal building energy standards and to assist these officials achieve the 30% or better improvement in efficiency.

Through my chairmanship of the Alliance to Save Energy's Federal Energy Productivity (FEP) Task Force and past membership on DOE's Federal Energy Management Advisory Committee (FEMAC) I have witnessed first hand the positive impact the federal government's own actions can have not only in lowering the federal government's utility bills, but also in influencing the larger market place for energy-efficient building practices. It is from this experience that PIMA strongly believes it is the role of the Federal government to lead by example.

Again, thank you for the opportunity to comment. If you have any questions regarding this submission, do not hesitate to contact me at 301-654-0017.

Sincerely,



Jared O. Blum
President

Dear Mr. Nasser,

Thank you for the opportunity to review and comment on the proposed final interim ruling. On behalf of the Naval Facilities Engineering Command's, I have reviewed the language and ask that you consider my comments and/or requests for clarification, as presented below:

1. The final interim ruling is limited in its scope: "deals solely with the energy efficiency of new Federal buildings, which are public property."

In this statement, the ruling omits any reference to "replacement buildings" found in successive paragraphs pertaining to "sustainable design principles". Since the rule "does not address the requirement that ?

agencies must apply sustainable design principles?" are we to assume that this rule only applies to "new Federal buildings" and not "replacement buildings"? It is unclear whether "replacement buildings" are or are not considered "new" buildings. Define or clarify the term "replacement building".

2. "Life-cycle cost-effectiveness" has not been adequately defined in the ruling. A simple payback equal to the life-cycle cost could be considered "effective" in trying to achieve the greatest energy efficiency. Another view is that "effectiveness" is at the lowest life-cycle cost regardless of energy-efficiency below the AHRAE 90.1 threshold. Please clarify.

3. Does the Energy Policy Act apply to public-private venture projects where the government does not develop or own the facilities, such as Navy family housing?

Respectfully,

Rick L. Landers
Business Manager
Office of the Chief Engineer
Capital Improvements Business Line
Naval Facilities Engineering Command

Mr. Nasserli,

I understand that the Department of Energy is proposing updating the Federal building requirements to adopt ASHRAE 90.1 2004 (commercial) and using the 2004 IECC Supplement (rather than 2006 code) as the basis for residential requirements. I also understand that comments are welcome by February 2, 2007 and can be sent to this email address.

The American Architectural Manufacturers Association (AAMA) feels that the Department of Energy (DOE) should be using the 2006 International Codes as the basis for its residential regulations since these are the most current standards. In addition, the 2004 supplement of the IECC currently referenced is not a code. It's our feeling that Federal policy and law encourage the Federal government to recognize and use the same national standards as everyone else.

We appreciate your consideration in this important matter.

Ken Brenden

American Architectural Manufacturers Association (AAMA) Code & Industry Affairs Manager

1827 Walden Office Sq., Ste. 550

Schaumburg, IL 60173

Office Phone: 715.298.1415

Cell Phone: 715.212.0962

Fax: 715.298.1577

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Dear Cyrus:

I represent Pilkington North America, Inc., one of the leading primary manufacturers of architectural glazing material in the country and am providing this comment to DOE's "Energy Conservation Standards for New Federal Commercial and Multi-Family High Rise Residential Buildings and New Federal Low-Rise Residential Buildings."

In its regulation, DOE requires compliance with the 2004 IECC Supplement for all new residential buildings on federal properties. I am sure you know that the International Code Council (ICC) has a methodology of code development which breaks the building and energy code development cycle into two parts, with one occurring every other 18-months. The first 18-month cycle produces a supplement to an existing edition of each building or energy code. The second 18-month cycle produces a new edition of each building and energy code. The only editions of the IECC that exist are those published in 2000, 2003 and 2006. The 2004 IECC referenced in your standard is not an edition. It is a Supplement to the 2003 IECC. By adopting the 2004 IECC Supplement, DOE has taken action which literally flies in the face of the ICC's methodology of breaking its development cycle into edition (ie, adoption) years and supplement (non-adoption) years.

This will result in confusion and require architects, engineers and materials suppliers to develop expertise in the details of the 2004 IECC Supplement, a document that has already been displaced by the 2006 IECC. To me, DOE's decision to use a supplement rather than the most recent edition of the IECC is inexplicable.

I would strongly encourage you to consider changing the DOE standard for residential buildings from the 2004 IECC Supplement to the 2006 edition of the IECC.

Very truly yours, Thom Zaremba

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Dear Mr. Nasser,
Please accept the following comments on the 10 CFR 433-435 interim rule as published December 4, 2006.

I am providing comments as a LANL employee in association with my position here, but comments do not necessarily represent the opinion of myself or LANS management.

1. All: Summary states "all new Federal buildings." Use of "all" creates some conflict since 90.1 and the IECC exclude certain building types/situations including "equipment and portions of building systems that use energy primarily to provide for industrial, manufacturing, or commercial processes." Suggest rewording to eliminate "all" and/or recognize (discuss) that there are excluded situations since they will not be able to be evaluated against the referenced standard/code. Likewise, suggest rewording of definition for "Commercial..." at Sect. 433.2 since it similarly encompasses a broad scope not intended by ASHRAE or ICC.
2. Additions and Major Renovations: Suggest including in scope major additions (of over 10,000 sq ft) and renovations that involve demolition down to the structural frame, and require 20% better than ASHRAE to correspond with EO 13423 issued 1/24/07.
3. Timing: The applicability concept "for which design for construction begins on or after the effective date of today's interim final rule, must be designed to comply..." can cause serious disruption to projects underway. For projects in the midst of contracting for or about to begin preliminary & final design or design/build, such a mandate would force amendment or cancelation of the procurement action to restate at great time/cost expense. Stated timing will similarly have a serious impact on a project baselined using a conceptual design without the requirement, and may cause major rework or cancelation of some projects. Suggest requiring that, within 60 days of CFR issuance, all new RFPs that include design must comply. To further eliminate disruption, exclude any project already baselined and with full funding. (Multiple instances of problematic timing statement in CFR).

Tobin Oruch, Eng Standards Mgr (work schedule A)
Los Alamos Nat'l Lab -- Conduct of Eng Program Office
TA-16-969 M/S C919 ph (505) 665-8475 fx 665-9835
oruch@lanl.gov <http://engstandards.lanl.gov/>

Cyrus Nasser
Federal Energy Management Program
U.S. Department of Energy

Subject: EE-RM/STD-02-112, Comments on Interim Final Rule “Energy Conservation Standards for New Federal Commercial and Multi-Family High-Rise Residential Buildings and New Federal Low-Rise Residential Buildings

Mr. Nasser,

Thank you for the opportunity to comment on the Interim Final Rule (IFR) referenced above. This is an important rule that could not only have a substantial impact on the energy efficiency and environmental impact of new Federal buildings, but could also help the Federal government lead the way in efficient green building design. If the IFR is to achieve these goals, however, two changes are necessary.

These critical changes are: (1) the formula for determining the energy percentage improvement must be revised to be identical to the ASHRAE 90.1-2004 Appendix G paragraph G1.2 formula – i.e., delete “— Receptacle and process loads” from the denominator of the equation; and (2) add a requirement that new Federal buildings and major renovations be designed to earn the ENERGY STAR, where applicable. Additional changes to clarify the role of receptacle and process loads are also needed to ensure that Federal agencies have a clear understanding of how to proceed.

Detailed comments are provided below.

Detailed Comments

Section 433.5 (Performance level determination) states that agencies shall use Appendix G of the ASHRAE Standard 90.1-2004 for Buildings Except Low-Rise Residential Buildings to determine energy consumption levels for both the baseline building and the proposed building, but changes the formula in paragraph G1.2 of Appendix G to exclude receptacle and process loads from the baseline for purposes of determining the percent improvement. There are a number of contradictions and problems with this approach, as outlined below.

- **Role of receptacle and process loads unclear**

It is unclear whether the IFR requires that receptacle and process loads remain constant from the baseline to the proposed building design, or if improvements in these areas can be used toward the 30% improvement for the building as a whole. The IFR includes contradictory statements:

- Section IV of the IFR (Reference Resources) states that the FEMP-designated or ENERGY STAR equipment agencies must specify “may be used to achieve part of the savings required of Federal building designs.”

However,

- Appendix G of ASHRAE Standard 90.1-2004 states that “Receptacle and process loads...shall be assumed to be identical in the *proposed* and *baseline building designs*...These loads shall be included in simulations of the building and shall be included when calculating the *baseline building performance* and *proposed building performance*” (Table G3.1). In other words, these loads must be held constant from the baseline to the proposed design, with no opportunity to show energy savings from them.
- With the potential savings available in receptacle and process loads, even with a baseline that includes FEMP-designated or ENERGY STAR equipment, it seems inappropriate to exclude these loads.

- **Receptacle and process loads must be included in the baseline**

Regardless of whether reductions in receptacle and process loads can be considered for the purpose of the Energy Conservation Standards, these loads should NOT be taken out of the calculations.

- If receptacle and process loads may be used to achieve the overall savings, it is clearly inconsistent to remove them from the baseline for the purpose of calculating the overall percentage savings.
- However, if receptacle and process loads may not be used to achieve the overall savings and instead must be held constant from the baseline to the proposed design, these loads should nevertheless be included in the percentage calculations. With these loads often contributing about 25% of total building energy consumption, removing them from the calculations means far less energy is saved by the Energy Conservation Standard than Congress intended.

Moreover, the Energy Conservation Standards should follow the same common-sense approach found in the MOU recently signed by more than 18 Federal agencies to establish “Federal Leadership in High Performance and Sustainable Buildings.” The MOU contains the following section:

II. Optimize Energy Performance

Energy Efficiency. Establish a whole building performance target that takes into account the intended use, occupancy, operations, plug loads, other energy demands, and design to earn the Energy Star® targets for new construction and major renovation where applicable. For new construction, reduce the energy cost budget by 30 percent compared to the baseline building performance rating per the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., (ASHRAE) and the Illuminating Engineering Society of North America (IESNA) Standard 90.1-2004, Energy Standard for Buildings Except Low-Rise Residential. For major renovations, reduce the energy cost budget by 20 percent below pre-renovations 2003 baseline.

In other words, new Federal buildings and major renovations must be designed to both achieve a 30 percent improvement relative to ASHRAE 90.1-2004 **and** to earn the ENERGY STAR, where applicable. This approach ensures that new buildings are not just designed with good technology but that the technology is in fact expected to deliver whole-building energy efficiency within the top 25% of buildings nation-wide (note that a building designed to earn the ENERGY STAR is expected to be around 30% more efficient than an average operating building).

The step of calculating an ENERGY STAR target for a building design is extremely simple once a whole-building energy budget has been calculated – as required by the IFR. Buildings that do not meet the ENERGY STAR level of 75 can then see what energy budget is required to meet that level and tweak their design to achieve it.

Thank you for considering these comments on behalf of EPA's ENERGY STAR program. If you have any questions, please call Cindy Jacobs at (202) 343-9045.

Sincerely,

Jean Lupinacci, Chief
ENERGY STAR Commercial and Industrial Branch
Climate Protection Partnerships Division
U.S. Environmental Protection Agency

**BEFORE THE
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
UNITED STATES DEPARTMENT OF ENERGY
WASHINGTON, D.C.**

Energy Conservation Standards)	Interim Final Rule
for New Federal Commercial and)	Docket No. EE-RM/STD-02-112
Multi-Family High Rise Residential)	RIN Number 1904-AB13
Buildings and New Federal Low-Rise)	
Residential Buildings)	

COMMENTS OF THE AMERICAN GAS ASSOCIATION

The American Gas Association (AGA) is pleased to submit its comments on the subject notice Interim Final Rule (IFR) Energy Conservation Standards For New Federal Commercial and Multi-Family High Rise Residential Buildings and New Federal Low-Rise Residential Buildings

AGA, founded in 1918, represents 200 local energy utility companies that deliver natural gas to more than 64 million homes, businesses and industries throughout the United States. AGA's members' account for more than 92 percent of all natural gas delivered by the nation's natural gas utilities. Natural gas meets almost one-fourth of the United States' energy needs. AGA collects, analyzes, and disseminates information and data on the natural gas industry, promotes the safe and efficient delivery and use of energy, and serves as a national voice for the gas utility industry.

AGA supports the incorporation of updated versions of ANSI/ASHRAE/IESNA Standard 90.1-2004 and the International Energy Conservation Code (IECC) by the Department of Energy (DOE) for federal buildings, except for the commercial electric water heater minimum efficiencies of Standard 90.1-2004. The commercial electric water heater minimum efficiencies in the standard are less stringent than the minimum efficiencies found in an earlier version of the standard, ANSI/ASHRAE/IESNA Standard 90.1-1989. DOE must not promulgate minimum efficiencies that are lower than levels found in earlier versions of the consensus standard. ASHRAE has not provided rationale for energy savings associated with these less stringent efficiency requirements, and AGA is not aware of any finding or analysis by DOE that less stringent requirements are justified.

The following are AGA's specific comments on the Interim Final Rule:

Comment 1. Remove references to “Advanced Energy Design Guide – ASHRAE” in part IV Reference Resources.

Advanced Energy Design Guide—ASHRAE <http://www.ashrae.org> (search for Advanced Energy Design Guide) or <http://resourcecenter.ashrae.org/store/ashrae/newstore.cgi?itemid=23307&view=item&page=1&loginid=6683251&words=Advanced%20Energy%20Design%20Guide&method=and&> A set of design guides for users who wish to go beyond Standard 90.1, targeted at 30 percent better than ASHRAE Standard 90.1–1999 (which translates to about 25 percent better than ASHRAE standard 90.1–2004).

Substantiation of Comment 1.

a) Both the Advanced Energy Design Guide for Small Retail Buildings and the Advanced Energy Design Guide for Small Office Buildings recommend the use of gas furnaces with a greater efficiency than the 90.1-1999 and 90.1-2004 including the use of condensing gas furnaces in climate zones 5, 6, 7, and 8 yet allow the use of electric resistance heating as an alternative, as described in HV2 within each guide. In addition, both design guides recommend the use condensing gas water heating systems (no residential condensing water heaters are available) or electric resistance water heating systems. Given the lack of availability of residential condensing gas water heaters and the price differential for the gas heating and water heating systems compared to the electric resistance units will encourage more buildings to use electric resistance. Yet the electric resistance heating and water heating systems use much more source energy. This is inconsistent with the purpose of energy savings in new federal buildings. The bottom line is that in the selection of the energy source for the HVAC and service water heating for small retail buildings and office buildings, a user of the Guides will believe, in attaining the goal of 30% energy savings, that using inexpensive electric resistance space heating and service water heating equipment is equivalent to selecting higher first cost condensing gas HVAC and service water heating. They will choose the inexpensive electric resistance heating option. This is the wrong message from ASHRAE and DOE and is counter to everyone's efforts of reducing total energy use in this country.

b) When the issues outlined in (a) were raised with the ASHRAE committees, they were not addressed. The Advanced Energy Design Guides were developed without using a consensus process and instead used a mock comment resolution process. This mock comment resolution process was designed to appear to solicit public input but instead of attempting to resolve legitimate comments, dismissed them with no procedure for appeal. The ad-hoc process that ASHRAE used for the development of these design guides is not rigorous enough for the U.S. Department of Energy to reference.

Comment 2. Update the first sentence of the fifth paragraph in Part II Discussion to read:

~~“Further, the experiences of ASHRAE (with the development of their Advanced Energy Design Guides for small office and small retail buildings) and the New Buildings Institute’s (NBI) Advanced Buildings program indicate that a savings 30 percent beyond that achieved through the incorporated standards is achievable in most building types with measures that are relatively “standard;” i.e., with measures that are widely available and with which the general industry is familiar.”~~

Substantiation of Comment 2.

Same substantiation as Comment 1.

Comment 3. Add the following text after the revised formula in Paragraph 433.5 Performance Level Determination, part (a):

“Further the definitions of proposed building performance and baseline building performance from ANSI/ASHRAE/IESNA Standard 90.1-2004 be changed to:

proposed building performance: the annual source energy consumption calculated for a proposed design.

baseline building performance: the annual source energy consumption for a building design intended for use as a baseline for rating above standard design.”

Substantiation of Comment 3.

a) Section 206 of Executive Order 13123 titled “Greening the Government Through Efficient Energy Management” states “Source Energy. The Federal Government shall strive to reduce total energy use and associated greenhouse gas and other air emissions, as measured at the source. To that end, agencies shall undertake life-cycle cost-effective projects in which source energy decreases, even if site energy use increases. In such cases, agencies will receive credit toward energy reduction goals through guidelines developed by DOE.” This Executive Order requires the use of source energy and so the performance level determination section should reflect this.

b) Reduction in source energy use better reflects the governments goal of reducing national energy use that site energy cost. See “Public Policy and Real Energy Efficiency” at www.gasfoundation.org for a direct comparison of energy cost and source energy showing that while energy cost is better than site energy comparisons, source energy is still the best way to measure energy efficiency.

Comment 4. Add the following text after the current text of Paragraph 435.5 Performance Level Determination:

“The performance improvements shall be calculated on the basis of annual source energy consumption instead of annual energy cost for both the standard reference design and the proposed design.”

Substantiation of Comment 4.

Same substantiation as Comment 3.

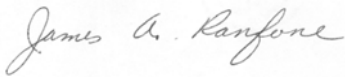
Comment 5. Throughout the notice where the following terms are used in conjunction with “30%” or used alone: “energy savings”, “energy consumption”, or “energy efficiency” they should be changed to “source energy savings”, “source energy consumption”, and “source energy efficiency”, respectively.

Substantiation of Comment 5.

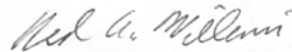
Same substantiation as Comment 3.

Summary

The Department of Energy needs to provide the leadership in reducing energy consumption in our nation and must do so by establishing an energy measurement method for federal buildings that includes the total energy consumed from the source and not rely on site based energy measurements. Anything less will result in a false measurement that would provide misleading energy usage and emission information resulting in the unintended consequence of more energy usage. The 5 specific comments provide DOE with a way to measure total energy that gets to that goal. The deletion of the non-consensus ASHRAE Advanced Energy Guides will also avoid the DOE from citing or relying on documents that clearly have serious flaws in the recommendations for HVAC systems and water heater selections.



James A. Ranfone
Managing Director
Building Codes and Standards
American Gas Association
400 North Capitol Street, NW
Washington, DC 20001
202/824-7310



Ted A. Williams
Director
Building Codes and Standards
American Gas Association
400 North Capitol Street, NW
Washington, DC 20001
202/824-7313



February 1, 2007

Mr. Cyrus Nasser
U.S. Department of Energy
Federal Energy Management Program, Mailstop EE-2L
1000 Independence Ave., SW
Washington, DC 20585-0121

Re: Energy Standard for New Federal Commercial and Multi-Family High-Rise Residential Buildings and Energy Standards for New Federal Low-Rise Residential Buildings, EE-RM/STD-02-112 and RIN 1904-AB13.

Dear Mr. Nasser:

The Alliance to Save Energy is pleased to submit our comments on the Department of Energy's Draft Final Rule on energy efficiency standards for new federal buildings, including commercial, multi-family high-rise, and low-rise residential federal buildings.

DOE is to be commended for issuing a Draft Final Rule which, on the whole, meets the intended goal of Section 109 of the Energy Policy Act of 2005: That federal buildings move beyond merely complying with the energy efficiency levels in current building codes, but exceed them significantly and thus help set the stage for a broader market transformation in all new construction, public and private. Leading professional and industry organizations, private firms, and individuals are already clearly committed to this goal, as evidenced by the recent announcements of AIA, ASHRAE, the US Green Building Council, and the US Council of Mayors to pursue policies and technical guidelines targeting 30% savings by 2010 and 50% or more by 2015 and thereafter.

In these comments we offer specific suggestions about changes in the Draft Rule to make it even more effective, address issues that DOE has not adequately dealt with, propose complementary actions to help translate the standards into actual buildings that perform efficiently and effectively over their full life-cycles, and recommend future steps DOE should take to update and strengthen the initial standards.

The Alliance to Save Energy is a non-governmental 501(c)(3) organization solely focused on improving energy efficiency. Founded in 1977 by Senators Charles H. Percy (R-IL) and Hubert H. Humphrey (D-MN), the Alliance was established in a bipartisan spirit, on the heels of the energy crises of the 1970s, to promote energy efficiency programs and policies worldwide for the benefit of consumers, the environment, the economy, and national security. The Alliance brings together a coalition of prominent business, government, environmental, and consumer leaders in supporting a national and global commitment to the efficient and clean use of energy.

Over the years, the Alliance has developed an international reputation for cost-effective energy efficiency policy advocacy, program management, and technical assistance, drawing on both the

breadth and depth of our staff and our Alliance Associates and partner organizations on a wide range of topics in the energy efficiency field. Our Washington DC-based staff leads energy efficiency initiatives ranging from environmental and climate change issues to research, policy advocacy, education, training, communications, marketing, and consumer awareness-building and branding campaigns. From more stringent building codes and appliance standards to utility demand-side management and voluntary programs to promote the purchase of energy-efficient cars and homes, the Alliance remains committed to educating the public, as well as business, and political leaders regarding the latest technologies, practices, policies, and programs to reduce energy use in homes, transportation, businesses, and government.

Our comments to DOE on the proposed Energy Standard for federal buildings cover these main points:

- 1) **Energy performance beyond 30% savings** – DOE should make it clear to agencies that the 30% savings goal (beyond current codes) represents a floor, not a ceiling, and that new federal facilities should be designed and built to save more than 30%, unless the agency demonstrates that this is not life cycle cost-effective. The current performance levels should be reviewed and updated, as required by law, at least every five years or whenever there has been a change in the ASHRAE Standard 90 or IECC model codes.
- 2) **Building equipment efficiency** – A separate section of EPACT-05 (Sec. 104) requires that all equipment specified and installed in federal construction or renovation projects must meet ENERGY STAR® or FEMP-designated energy efficiency criteria. Since many of the federal specifications for energy-efficient equipment are more stringent than the minimum prescriptive requirements in ASHRAE Standard 90 and IECC included by reference in the federal building standards. To avoid confusing or misleading federal agencies, this provision should be included in the text of sections 10 CFR 433, -434, and -435 (not just in the Federal Register supplemental material).
- 3) **Coverage of renovations and leased federal buildings** – DOE should change the wording of the proposed Rule to make it clear that these energy standards apply to major renovations as well as to new construction, both commercial and residential. The current wording appears to eliminate the current wording that applies the standard to major building renovations as well as new construction (10 CFR 434, Sec. 101.1.1(a)(3)). Where a federal agency contracts to lease a newly built (renovated) building, it should be required to include these same energy standards in the lease agreement. This includes the long-term lease arrangements for “privatized” military family housing.
- 4) **Start-up commissioning and periodic re-commissioning** – DOE should include a specific requirement for commissioning as part of the federal building energy standard. Many years of experience by federal agencies have demonstrated that start-up commissioning of a building’s energy systems is essential to assuring that the intended energy performance is actually achieved. We strongly recommend that DOE add language to the Interim Final Rule requiring that federal agencies employ building commissioning practices tailored to the size and complexity of the building and its system components in order to verify performance of building components and systems and help ensure that design requirements are met.
- 5) **Energy metering** – DOE should add to the building standards a requirement that every new, renovated, or built-to-lease building be metered at the whole-building level for all

forms of energy, and that certain buildings include “advanced” (interval) electricity meters as well as submetering of major equipment and end-uses.


- 6) **Implementation and compliance** – DOE should take a number of actions, in cooperation with OMB and others, to assure that these new energy standards are widely disseminated and incorporated into standard practice by federal agencies and their design firms, that new projects are carefully reviewed for compliance prior to funding approval, and that actual energy performance of new buildings is tracked and benchmarked over a period of years as a source of feedback to the design process.
- 7) **DOE leadership** – The Department of Energy should set an example by immediately updating the design guidelines and specifications for its own new construction and renovation projects, and aggressively applying these new standards to one or more of its 2007 projects, as flagships and examples for other agencies to follow.
- 8) **Beyond minimum standards: Federal construction to lead technology innovation** – Future updates to these federal energy standards should consider innovative provisions to improve overall building performance and cost-effectiveness, and to help make building systems more adaptable to new and emerging technologies. Examples include demand-responsive controls, circuitry designed for solar PV or plug-in hybrids, plumbing and roof structures suited to solar water heating, space and access for ground-source heat pump systems, etc.

A detailed discussion of each of these recommendations is included in the attachment to this letter.

We recognize that some of these recommended changes may require additional analysis and rulemaking effort by DOE. While we strongly prefer to have these changes implemented as soon as possible, we do not want to see any further delay in the effective date of the Final Rule, beyond January 3, 2007 as now proposed. The DOE standards were originally to be published in August 2006, 1 year after the enactment of EPACT-05. Additional delay will allow new buildings to be added to the federal stock that are less efficient than they can and should be – wasting energy and adding to taxpayer costs for the next 3-5 decades or more.

Thus, if some of these new provisions cannot be added to the energy standard immediately we urge DOE to proceed with a second stage rulemaking that does include them, along with the water efficiency and sustainability criteria also called for in EPACT-05.

Thank you again for your consideration of these comments.


Jeffrey P. Harris
Vice President for Programs
Alliance to Save Energy

(1 attachment)

Attachment A

Alliance to Save Energy Comments on the DOE Interim Final Rule:

***Energy Standard for New Federal Commercial and
Multi-Family High-Rise Residential Buildings and
Energy Standards for New Federal Low-Rise Residential Buildings
(EE-RM/STD-02-112 and RIN 1904-AB13)***

1) Energy Performance Beyond 30% Savings

DOE should make it clear to agencies that the 30% savings goal (beyond current codes) represents a floor, not a ceiling, and that new federal facilities should be designed and built to save more than 30%, unless the agency demonstrates that this is not life cycle cost-effective. The current performance levels should be reviewed and updated, as required by law, at least every five years or whenever there has been a change in the ASHRAE Standard 90 or IECC model codes.

We do not agree with the interpretation of EPACT-05 offered by DOE of Sec. 109 of EPACT-05, requiring that, where life cycle cost-effective:

“...buildings be designed to achieve energy consumption levels that are **at least 30 percent** below the levels established in the version of the ASHRAE Standard or the International Energy Conservation Code, as appropriate, that is in effect as of the date of enactment of this paragraph...” [emphasis added]

In the Supplementary Information accompanying its Interim Final Rule, DOE states that the standards “...do not require Federal agencies to consider the life-cycle cost-effectiveness of improvements beyond the 30 percent level.” The comments go on to say that agencies are “not precluded” from designing to a higher level of energy efficiency and DOE encourages them to do so. However, a straightforward reading of the statute is that Congress intended agencies to meet or exceed the 30% savings target, subject to cost-effectiveness. In the very next paragraph of the Supplementary Information, DOE cites examples from ASHRAE and the New Buildings Institute of efficient designs that are more than 30% better than the model codes.

We believe that this section of the DOE commentary is not only unnecessary, but may have the effect of weakening the clear wording in the standard itself (in Sections 433.4(a)(2) and 435.4(a)(2)) which repeats the same phrase used in EPACT-05. We urge DOE to clarify, in subsequent Rulemaking Notices and in guidance to agencies, that the 30% goal must by law be considered a floor rather than a ceiling for energy-efficient design. Agencies should pursue designs that maximize the level of energy savings that are cost-effective over the life of the building or subsystem.

Federal law already requires that:

“The Secretary shall periodically, but not less than once every 5 years, review the Federal building energy standards established under this section and shall, if significant energy savings would result, upgrade such standards to include all new energy efficiency and

renewable energy measures that are technologically feasible and economically justified.”
(48 USC 6834)

Note that this requirement for periodic review is in addition the requirement in EPACK-05, Sec. 109, that DOE review and where necessary update the federal building standard within one year after any revision of ASHRAE Standard 90 or the IECC. The combination of these provisions means that DOE must review and update the federal energy standard on at least a five-year schedule, or more often if one of the model codes is changed.

Consistent with these statutory requirements, DOE should clearly announce its plan and schedule for regular reviews of the initial standards set forth in this Interim Rule. Future updates should be designed to strengthen the current requirements in order to assure that energy efficiency in federal buildings remains in the forefront of the widespread movement by industry and professional organizations, including AIA and ASHRAE, to accelerate the pace of efficiency improvements in all new construction to 50 percent or larger savings compared with current practice.

2) Building Equipment Efficiency

A separate section of EPACK-05 (Sec. 104) requires that all equipment specified and installed in federal construction or renovation projects must meet ENERGY STAR® or FEMP-designated energy efficiency criteria. Many of the federal specifications for energy-efficient equipment are more stringent than the minimum prescriptive requirements in ASHRAE Standard 90 and IECC included by reference in the federal building standards. To avoid confusing or misleading federal agencies, this provision should also be included in the text of sections 10 CFR 433, -434, and -435 (not just in the Federal Register supplemental material).

In the Supplemental Information to this Interim Final Rule, DOE does comment that:

“Federal agencies are required by the Energy Policy Act of 2005 to specify FEMP-designated or ENERGY STAR equipment, including building mechanical and lighting equipment and builder-supplied appliances, for purchase and installation in all new construction. This equipment is generally more efficient than the corresponding requirements of ASHRAE Standard 90.1–2004 and the 2004 IECC, and may be used to achieve part of the savings required of Federal building designs.”

However, this information is included under the “Reference Resources” section of the Supplemental Information only, and will not become part of the permanent requirements incorporated in the Code of Federal Regulations, that agencies will refer to for guidance many years after the Federal Register notice has faded from memory.

The DOE commentary also states:

“Today’s rule does not take a prescriptive approach as to how the 30 percent reduction is to be obtained. The baseline standards contain a limited set of mandatory requirements, such as sealing leaks in the building envelope and air duct systems. Beyond this, there are no restrictions on how the Federal agency achieves cost-effective energy savings.”

This last statement is not factually correct. There **are**, in fact, such restrictions, since Sec. 104 of EPACT-05 established minimum levels of energy efficiency for certain HVAC, lighting, installed appliances, and other equipment (such as building-level distribution transformers). These minimum requirements, which generally exceed the levels identified as prescriptive paths for either ASHRAE Standard 90 or the IECC, apply to all federal buildings, whether the appliances and equipment are installed as part of a new construction project or added later during a renovation project or normal equipment retirement and replacement.

The failure to include in the building standards a cross-reference to the equipment efficiency requirements of EPACT-05 Section 104 – combined with this incorrect reference in the Supplemental Information to “no restrictions” – threaten to mislead federal agencies, designers, and builders into thinking that the equipment efficiency requirements are somehow optional for new construction or renovation. This omission should be corrected in the published Final Rule.

3) Coverage of Renovations and Leased Federal Buildings

DOE should change the wording of the proposed Rule to make it clear that these energy standards apply to major renovations as well as to new construction, both commercial and residential. The current wording appears to eliminate the current wording that applies the standard to major building renovations as well as new construction (10 CFR 434, Sec. 101.1.1(a)(3)). Where a federal agency contracts to lease a newly built (renovated) building, it should be required to include these same energy standards in the lease agreement. This includes the long-term lease arrangements for “privatized” military family housing.

There are explicit provisions both in federal law and in existing federal regulations that extend the coverage of federal energy efficiency standards both to renovation projects (not just new construction) and to federally leased space. Indeed, ASHRAE Standard 90, referenced in the DOE energy standard, anticipates and provides explicitly for envelope and equipment changes associated with building renovation.

The basic statutes covering federal energy management include this clear definition under Part B:

“For the purposes of this part... (6) the term ‘Federal building’ means any building, structure, or facility, or part thereof, including the associated energy consuming support systems, which is constructed, renovated, **leased**, or purchased in whole or in part for use by the Federal Government and which consumes energy.” (42 USC 8259; emphasis added)

There are similar provisions in the definitions sections of existing federal regulations related to federal building energy standards and to life cycle cost-effectiveness methods:

“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.” (10 CFR 434.201)

“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.” (10 CFR 435.303)

“Federal building means an energy or water conservation measure or any building, structure, or facility, or part thereof, including the associated energy and water consuming support systems, which is constructed, renovated, **leased**, or purchased in whole or in part for use by the Federal government.” (10 CFR 436.11)

Moreover, previous federal government policy statements are also clear that leased facilities are included in the definition of a “federal facility.” Executive Order 13123 (which was replaced and broadened a few days ago by President Bush’s Executive Order 13423) stated that:

“Sec. 705. ‘Facility’ means any individual building or collection of buildings ... which is constructed, **renovated**, or purchased in whole or in part for use by the Federal Government. It **includes leased facilities** where the Federal Government has a purchase option or facilities planned for purchase. In any provision of this order, the term “facility” also includes any building 100 percent leased for use by the Federal Government where the Federal Government pays directly or indirectly for the utility costs associated with its leased space. The term also includes Government-owned contractor-operated facilities.”

Finally, the most recent Executive Order 13423 includes an explicit reference to energy efficiency in federal building renovation projects, calling on the head of each agency to include energy efficiency in the:

“...high performance construction, lease, operation, and maintenance of buildings...”

Agency heads are also directed to

“...ensure that (i) new construction and major renovation of agency buildings comply with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings set forth in the Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding (2006)*.”

This referenced MOU includes the same efficiency provisions as EPACKT-05 for new federal buildings, and a separate provision for building renovations related to a pre-renovation baseline.

The DOE Interim Final Rule, as presently drafted, is silent on coverage of leased buildings and of renovation projects. This may lead federal agencies to incorrectly assume that these energy standards do not apply to leased buildings and renovations. DOE should revise the wording to clarify that this standard does apply in both cases.

In fact, we believe that the current wording has inadvertently eliminated a clear reference to coverage of renovations. The current federal regulations make it clear that the scope of energy efficiency standards includes major building renovations:

“101.1.1 (a) Except as provided by section 101.2, the provisions of this part apply if an agency is constructing:

- (1) A building that has never been in service;
- (2) An addition that adds new space with provision for a heating or cooling system, or both, or for a hot water system; or
- (3) **A substantial renovation of a building**, involving replacement of a heating or cooling system, or both, or hot water system, that is either in service or has been in service.”
(10 CFR 434; emphasis added)

The DOE Interim Final Rule proposes to modify Section 434, including the above subsection, to apply only to buildings for which construction started before 1/3/07. The Interim Rule then fails to add a comparable section under the new 10 CFR 433 to explicitly state that coverage of buildings constructed after that date (and subject to the new energy standard) includes major renovations as well as new construction. This missing language should be added to the Final Rule.

In enacting EPACT-05, Congress clearly intended to strengthen the energy efficiency requirements for federal buildings, rather than to narrow their application by omitting leased buildings and renovation projects – especially given the substantial amount of leasing and ongoing building renovations in the federal sector. DOE should also add this provision to Section 435 for residential buildings, since there is a significant level of renovation activity for DoD military family housing and other federal residential buildings.

4) Start-up Commissioning and Periodic Re-Commissioning – DOE should include a specific requirement for commissioning as part of the federal building energy standard. Many years of experience by federal agencies have demonstrated that start-up commissioning of a building’s energy systems is essential to assure that the intended energy performance is actually achieved. We strongly recommend that DOE add language to the Interim Final Rule requiring that federal agencies employ building commissioning practices tailored to the size and complexity of the building and its system components, in order to verify performance of building components and systems and help ensure that design requirements are met.¹

The DOE rulemaking fails to consider the essential role of building commissioning and feedback loops in achieving the requirement for federal buildings to reduce energy use by 30% or more, compared with current model codes. Commissioning requirements have been incorporated into many programs for high-performance buildings, including those cited in the rulemaking (i.e., ASHRAE’s Advanced Energy Design Guides and the New Buildings Institute’s Advanced Buildings program). Other programs, most notably the U.S. Green Building Council’s LEED-NC[®] Green Building Rating System for New Construction & Major Renovations, also include commissioning requirements and, in the case of LEED, a credit for enhanced commissioning. In all these examples, commissioning provides assurance that buildings are built the way they were intended and a starting point for ongoing energy management to assure that energy goals are met and the savings are real.

The value of commissioning, periodic re-commissioning,² and Continuous CommissioningSM (which provides ongoing feedback to the building operator) are supported by DOE. The DOE website explains that commissioning is needed “due to the sophistication of building designs and the complexity of building systems today.”³ Commissioning is “a key part of designing and building high-performance buildings because it ensures that the money spent on controls, sensors, and equipment will be paid back over time through energy-efficient building operation.”⁴

¹ This same requirement is contained in the Federal Sustainability MOU (2/06), which was made mandatory in January 2007 by Executive Order 13423. According to the MOU, agency actions are to include “...a designated commissioning authority, inclusion of commissioning requirements in construction documents, a commissioning plan, verification of the installation and performance of systems to be commissioned, and a commissioning report.”

² Re-commissioning is the process of commissioning a building that has previously been commissioned – either during construction or during operation.

³ <http://www.eere.energy.gov/buildings/info/operate/buildingcommissioning.html>

⁴ <http://www.eere.energy.gov/buildings/info/plan/commissioning.html>

Buildings built to achieve 30% energy savings beyond code are clearly “high-performance” and require commissioning to achieve their design objective and the intent of Congress in EPACT-05 Section 109.

The goal of any building energy standard is not just an efficient design on paper, but the achievement of an energy-efficient, high-performance building on the ground – one that will continue to produce energy savings over its lifetime. Commissioning supports this goal at the time of construction but also can be used to establish feedback loops through Continuous CommissioningSM, integrated commissioning and diagnostics, ongoing benchmarking (e.g., using ENERGY STAR® Portfolio Manager), appropriate metering (see the next section), and monitoring systems to provide feedback and help maintain energy savings over time.

We recommend that DOE require commissioning for federal buildings based on two provisions for the LEED-NC rating:

- “Energy & Atmosphere prerequisite 1: Fundamental Commissioning of the Building Energy Systems,” and
- “Energy & Atmosphere credit 3: Enhanced Commissioning.”

These two sections specify a series of commissioning actions recommended by recognized experts in the field and included in the California Commissioning Collaborative’s “California Commissioning Guide: New Buildings.” The early involvement of a commissioning authority, development of a systems manual, and building operator training described under the “enhanced commissioning credit” are all essential elements of commissioning that support the initial and ongoing energy savings achieved in the building. In fact, half of the 38 federal projects receiving LEED certification as of January 3, 2007 had met these commissioning requirements, including the additional credit.⁵

We further recommend that DOE guidance to federal agencies to implement this new standard call for annual benchmarking, using the ENERGY STAR® Portfolio Manager, of new federal buildings above a minimum size (e.g., 50,000 sq.ft.) or energy consumption level for all applicable federal building types. These guidelines should also call for either re-commissioning every three years or implementation of Continuous CommissioningSM practices, including the use of energy management software to provide continuous feedback to building operators on system operation.

5) Energy Metering – DOE should add to the building standards a requirement that every new, renovated, or built-to-lease building be metered at the whole-building level for all forms of energy, and that certain buildings include “advanced” (interval) electricity meters as well as submetering of major equipment and end-uses.

Section 103 of EPACT-05 required that all federal buildings shall be metered by October 1, 2012, for the purposes of “efficient use of energy and reduction in the cost of electricity.” Agencies are also required to “...use, to the maximum extent practicable, advanced meters or advanced metering devices that provide data at least daily and that measure at least hourly consumption of electricity.”

⁵ Six additional federal projects were certified but information was insufficient to determine if they received the Enhanced Commissioning credit.

It makes no sense for a federal agency to build a new building without installing meters for all forms of energy (electricity, natural gas, steam, and chilled or hot water), only to add these meters within a few years as a more costly retrofit measure, as required by EPACT-05.

In response to EPACT-05, DOE/FEMP issued “Guidance for Electric Metering in Federal Buildings” (2/3/06). This report, while it covers only metering of electricity rather than of “energy” as specified in EPACT-05, does state that “Many agencies already require meters to be installed in all new construction and major renovations, and this practice should be replicated across the federal government.”

In larger buildings and buildings with multiple tenants it is important to have not only whole-building metering, but provisions for continuous or spot sub-metering of major energy using systems and equipment, in order to provide building operators with the information needed to effectively manage the building and to verify actual energy savings from retrofit projects or practices. The current federal regulations for building energy standards include metering requirements for both residential and non-residential federal buildings, but the proposed Interim Final Rule once again appears to eliminate these provisions by applying Section 10 CFR 434 only to construction prior to January 3, 2007 – while failing to include comparable provisions in the new Section 10 CFR 433 for construction after that date.

Existing federal standards require that

“Single-tenant buildings with a service over 250 kVA and tenant spaces with a connected load over 100 kVA in multiple-tenant buildings shall have provisions for check metering of electrical consumption.” (10 CFR 434.401)

Check metering is defined as “instrumentation for the supplementary monitoring of energy consumption (electric, gas, oil, etc) to isolate the various categories of energy use to permit conservation and control, in addition to the revenue metering furnished by the utility.” This check-metering applies to separate circuits for: lighting and receptacles, HVAC systems, service water heating (SWH), elevators, and special equipment of more than 20 kW. Also, Tenant-shared HVAC and water heating systems in multiple tenant buildings must have provisions for separate check metering.

The DOE/FEMP report on metering does point out that whole-building metering may not be reasonable or cost-effective for very small federal facilities. Thus, we recommend that language be added to the Interim Final Rule requiring that:

- 1) All new Federal commercial buildings over 10,000 square feet (and all renovations involving 10,000 square feet or more) shall have building level utility meters for all energy sources, including electricity, natural gas, fuel oil, and centrally provided steam and chilled water.
- 2) Each dwelling unit in a Federal multifamily high-rise building shall also have an individual utility meter for electricity.
- 3) Provisions for check-metering of major energy-using equipment and systems, similar to the existing language, should apply to federal buildings constructed or renovated after January 2007

6) Implementation and Compliance

DOE should take a number of actions, in cooperation with OMB and others, to assure that these new energy standards are widely disseminated and incorporated into standard practice by federal agencies and their design firms, that new projects are carefully reviewed for compliance prior to funding approval, and that actual energy performance of new buildings is tracked and benchmarked over a period of years as a source of feedback to the design process.

The Department evidently intends to supplement this Interim Final Rule with additional technical guidance, training, and outreach to federal agencies. DOE should also collaborate with ASHRAE, the New Buildings Institute, and others to develop model prescriptive packages, design guidelines for use by GSA and other agencies with major construction activities, efficiency requirements in the Unified Facility Guide Specifications, model language for federal solicitations and contracts, and case studies of successful low-energy buildings that meet the requirements of EPACT-05 and the new federal energy standard. As another example, further DOE technical guidance will be needed to help agencies interpret the differences, for purposes of the federal building standard, in the end-uses used to calculate energy cost budget savings, compared with the formula set forth in ASHRAE Standard 90.1-2004 Appendix G.

DOE and other agencies should also reach out, with the help of ASHRAE, AIA, and other professional organizations, to federal contractors for design and construction services, to make sure that these contractors are aware of these latest requirements for energy efficiency in federal buildings – and also that they are aware of the EPACT-05 provision for a client-assignable federal tax deduction for the “principal designer” of energy-efficient government buildings.

We applaud DOE’s proposed initiatives in these areas, and will urge the President to request – and Congress to appropriate – adequate resources to allow DOE and other agencies to carry out these important implementation activities.

There are also important provisions in federal law to assure compliance with these requirements. First, Section 109 of EPACT-05 requires that:

In the budget request of the Federal agency for each fiscal year and each report submitted by the Federal agency under section 548(a) of the National Energy Conservation Policy Act (42 U.S.C. 8258(a)), the head of each Federal agency shall include—

- “(i) a list of all new Federal buildings owned, operated, or controlled by the Federal agency; and
- “(ii) a statement specifying whether the Federal buildings meet or exceed the revised standards established under this paragraph.”

Second, existing law requires that:

The head of a Federal agency may expend Federal funds for the construction of a new Federal building only if the building meets or exceeds the appropriate Federal building energy standards established under section 6834 of this title. (42 USC 6835)

We call on DOE and the Office of Management and Budget to set up appropriate mechanisms to assure that all federal construction projects are carefully reviewed for compliance with these energy standards, in keeping with these two important statutory provisions.

Finally, as discussed above, new federal buildings above a specified size should be monitored for a multiyear period as a source of feedback to their operators, agency executives, and to the design team. The Federal Sustainability MOU (2/06), now made mandatory as a result of EO 13423 (January 2007), commits agencies to:

“...install building level utility meters in new major construction and renovation projects to track and continuously optimize performance. Compare actual performance data from the first year of operation with the energy design target. After one year of occupancy, measure all new major installations using the Energy Star® Benchmarking Tool for building and space types covered by Energy Star®. Enter data and lessons learned from sustainable buildings into the High Performance Buildings Database.”

6) DOE Leadership

The Department of Energy should set an example by immediately updating the design guidelines and specifications for its own new construction and renovation projects, and aggressively applying these new standards to one or more of its 2007 projects, as flagships and examples for other agencies to follow.

7) Beyond Minimum Standards: Federal Construction to Lead Technology Innovation

Future updates to these federal energy standards should consider innovative provisions to improve overall building performance and cost-effectiveness, and to help make building systems more adaptable to new and emerging technologies. Examples include demand-responsive controls, circuitry designed for solar PV or plug-in hybrids, plumbing and roof structures suited to solar water heating, space and access for ground-source heat pump systems, etc.

New federal buildings offer the single most important opportunity to create a capital stock that can continue to adapt to technology advances and future changes – and uncertainties – in the cost and availability of electricity and natural gas. While it has not been a priority for federal building standards in the past, we recommend that DOE begin to incorporate such adaptability, or “new technology readiness” into the design of new federal buildings from now on – much as the City of Austin and others have begun to specify that new homes and other buildings must include plumbing, wiring, and roof structures that make them “solar-ready” for easy future installation of PV and/or solar hot water systems. There are many other examples of technologies that may be highly desired for installation at some point in the next 30-50 years and that can readily be accommodated by relatively small changes at time of construction – without the requirement of committing to the full installation cost in a new federal building being built today.

DOE should begin incorporating these principles of adaptability and technology-readiness into federal building standards and design principles.



February 2, 2007

Mr. Cyrus Nasser
U.S. Department of Energy
Federal Energy Management Program
Mailstop EE-2L
1000 Independence Avenue, S.W.
Washington, D.C. 20585-0121

**Comments: EE-RM/STD-02-112 (RIN 1904-AB13)
Energy Standard for New Federal Commercial and Multi-Family
High-Rise Residential Buildings and Energy Standards for New
Federal Low-Rise Residential Buildings**

Dear Mr. Nasser:

For 150 years, The American Institute of Architects (AIA) has represented the professional interests of America's architects. As AIA members, 80,000 licensed architects and allied design professionals express their commitment to excellence in design, sustainability and livability in our nation's buildings and cities.

Improving the energy efficiency of the built environment has long been a key priority for the architecture profession and the AIA. In particular, the AIA seeks to dramatically increase the number of high-performance buildings constructed in the coming decades. Many architects have already incorporated energy efficient design principles into their work, and these efforts continue to expand within the profession. In addition, the AIA supports federal, state, and local legislation, regulations and incentives that encourage and aid the construction of high-performance buildings.

In December 2005, the AIA adopted a policy position calling for sustainable design including resource conservation to achieve a minimum 50 percent reduction from the current level of consumption of fossil fuels used to construct and operate new and renovated buildings by the year 2010, and promote further reductions of remaining fossil fuel consumption by 10 percent or more in each of the following five years until "carbon neutrality" is achieved by 2030. This policy has been embraced by, among others, the U.S. Conference of Mayors, and the AIA is working with Congress to enact federal statutory language codifying these targets for all new and renovated federal facilities.

The AIA welcomes the opportunity to comment on interim final rule EE-RM/STD-02-112 (RIN 1904-AB13), Energy Standard for New Federal Commercial and Multi-Family High-Rise Residential Buildings and Energy Standards for New Federal Low-Rise Residential Buildings, published in the *Federal Register* December 4, 2006. Our comments address the following topics:

- I. Scope and applicability of Section 109 of EPAct
- II. ASHRAE 90.1/IECC Targets
- III. Additional Section 109 Provisions
- IV. Compliance and Recordkeeping
- V. Education and Training

I. Scope and applicability of Section 109 of EPAct

The interim final rule states that the provisions of Section 109 of the Energy Policy Act of 2005 (P.L. 109-58) shall be applicable to “new Federal commercial and multi-family high-rise residential buildings [and] new Federal low-rise buildings, for which design for construction begins on or after the effective date of [the] interim final rule.” This raises issues regarding scope and applicability relating to federally leased buildings and to major renovations.

Both the statute and the interim final rule are silent on whether the provision is intended to apply to both federally owned and federally leased buildings. According to the Public Buildings Service of the General Services Administration, fully 49 percent of GSA’s 342 million square feet of office space is in privately owned leased facilities. The AIA believes that, due to the large percentage of federal facilities that are leased, the interim final rule should be clarified to apply to both federally owned *and* federally leased properties in order to maximize its effectiveness. Furthermore, we believe that the provision should be applied similarly to privatized housing for Department of Defense personnel.

With regard to the issue of major renovations, there is ample precedence in both federal statute and regulation for including major renovations in the requirements of this interim final rule. For example, the Architectural Barriers Act defines “buildings” as “any building or facility (other than (A) a privately owned residential structure not leased by the Government for subsidized housing programs and (B) any building or facility on a military installation designed and constructed primarily for use by able bodied military personnel) . . . (1) to be constructed *or altered* by or on behalf of the United States.” (42 U.S.C. §§ 4151 et seq.) (emphasis added) In addition, the Interagency Security Criteria,

which federal agencies use to ensure the safety and security of federal facilities, is applied to both new construction and major renovations (PBS Instructional Letter, PBS 11-02-01).

Furthermore, we are concerned that the interim final rule may have the effect of actually reducing energy efficiency requirements for major renovations. Prior to the effective date of this interim final rule, 10 CFR 434 (Energy Code for New Federal Commercial and Multi-Family High Rise Residential Buildings) required that both new construction and “[a]n addition that adds new space with provision for a heating or cooling system, or both, or for a hot water system; or (3) [a] substantial renovation of a building, involving replacement of a heating or cooling system, or both, or hot water system, that is either in service or has been in service” (10 CFR 434.101.1.1) be subject to the energy efficiency requirements of the Part, which generally follow ASHRAE 90.1-1989.

The interim rule, however, changes Part 434 to make it applicable only to buildings “for which design for construction began before January 3, 2007.” For buildings for which design for construction begins after the effective date, which are covered by the new Part 433, no equivalent language regarding additions or renovations is included. Thus, major renovations started after January 3, 2007, would not be subject to the energy efficiency provisions of either Part. The AIA, therefore, strongly urges the Department to clarify that the interim final rule applies to both new construction and major renovations by incorporating the scoping language in 10 CFR 434.101.1.1 into the new Part 433.

II. ASHRAE 90.1/IECC Targets

The interim final rule requires covered Federal buildings to meet the minimum requirements of ASHRAE 90.1-2004 (in the case of federal commercial and multi-family high-rise residential buildings) and the 2004 IECC (in the case of low-rise residential buildings), and to “achieve a level of energy efficiency 30 percent greater than” those standards, “when life-cycle cost effective.” The interim final rule goes on to state that the Department believes that it cannot require agencies to achieve a level of energy efficiency greater than 30 percent due to the fact that Congress specified that level in the Energy Policy Act.

We firmly believe that the statute’s framework offer the Department sufficient latitude to require agencies to calculate the life-cycle cost-effectiveness of energy-saving designs that go beyond 30 percent. Short of requiring agencies to adopt designs that go beyond 30 percent if life-cycle cost-effective, we strongly urge the Department to:

1. Require agencies to calculate the maximum energy efficiency that can be achieved while remaining cost-effective, and to report that information to the Department.
2. Develop a resource for agencies that demonstrates how energy savings greater than 30 percent of those in the applicable standards can be achieved in ways that are life-cycle cost-effective.

III. Additional Section 109 Provisions

The interim final rule notes that the Department will issue regulations on the other provisions in Section 109 of the Act, including the requirements on sustainable design principles and water conservation technologies, at a later date. We believe that it is vital that the Department move expeditiously to issue rulemaking on these other provisions.

Buildings are complex organisms, and changes in technologies and equipment in one aspect of the building design affect other parts of the design. Only by considering sustainable and energy efficient features in a holistic, building-wide manner – at the outset of the design process - can designers achieve maximum benefits in a cost-effective way. For example, altering the siting of a building (i.e., rotating it from east-facing to south-facing) will impact the ambient heat and daylighting levels, thus affecting the kinds of HVAC systems and daylighting systems the designers will employ.

We are concerned that failure to issue timely guidance on the other Section 109 provisions may result in the development and implementation of inconsistent and incomplete sustainability strategies, thus rendering Section 109 a lost opportunity for greater energy savings. Therefore, the AIA urges the Department to issue guidance on the other Section 109 provisions as expeditiously as possible.

IV. Compliance and Recordkeeping

We are concerned that the interim final rule does not spell out precise measures for ensuring that agencies comply with the provisions of Sec. 109, nor does it create a mechanism to measure the effectiveness of agencies' efforts to reduce energy usage in their buildings. In order to ensure that the energy reductions sought by Congress in Section 109 of the Energy Policy Act are fully realized, we urge the Department to issue rules that clarify that:

1. Measurement of energy savings is to be taken at commissioning. While design technologies such as Building Information Modeling (BIM) can provide realistic assumptions about energy targets in the design process, the only way to ensure that federal buildings covered under this provision actually meet the intended targets with relation to ASHRAE 90.1 and the IECC is to require agencies to measure energy savings at commissioning.
2. Agencies are required to submit information to the Department that includes:
 - a. An analysis of the expected (i.e., at design) energy savings in relation to otherwise identical buildings meeting the minimum criteria established in the applicable standard
 - b. An analysis of the actual energy savings measured at commissioning
 - c. A description of steps the agency plans to take if actual energy savings do not achieve a level of energy efficiency 30 percent greater than the applicable standard if life-cycle cost-effective
 - d. An analysis of the maximum energy efficiency that can be achieved while remaining cost-effective
 - e. An explanation of which life-cycle cost-analysis method from 10 CFR 436 the agency used to measure life-cycle cost-effectiveness, and the results of that analysis
 - f. The extent to which the agency incorporated Energy Star or FEMP-designated products, as specified in Sec. 104 of the Energy Policy Act, in the building
 - g. A description of how the agency plans to continue monitoring energy usage after commissioning, including frequency of monitoring and methods.
3. The Department will work to develop a separate CBECS sample that includes federal buildings that have been designed and constructed following the effective date of this provision.

V. Education and Training

We believe that providing agency personnel, facility managers, designers and contractors with accurate, updated information on the targets included in this interim rule and how to achieve maximum energy savings is critical to the success of this initiative. We are pleased that the Department states in its interim final rule that it plans to provide guidance and tools to help federal agencies in meeting the requirements. We believe that the Department should also take the following steps:

1. Providing information and training to building operators and facility managers on how to operate and maintain energy efficient technologies so that energy savings can continue to be realized.
2. Coordinating with other federal agencies to assure that these specs become part of their design guidelines, including the GSA Facilities Standards for the Public Buildings Service, the Unified Facilities Criteria, and others.
3. Assisting in the development of model language for federal solicitations and contracts that reflect the requirements of Section 109.
4. Developing training programs and other electronic educational tools for designers and contractors.
5. Coordinating with the Energy Star program to link Energy Star programs and incentives to the requirements of Section 109.

The AIA appreciates the opportunity to comment on this interim final rule and stands ready to assist the Department as it works to improve the energy efficiency of federal facilities.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul T. Mendelsohn". The signature is written in a cursive style with a long horizontal flourish at the end.

Paul T. Mendelsohn
Vice President, Government and Community Relations

RECA

RESPONSIBLE ENERGY CODES ALLIANCE

1850 M Street, NW, Suite 600
Washington, DC 20036

(PH) 202-339-6366
(FAX) 202-342-0807

www.RECA-codes.org

February 2, 2007

Mr. Cyrus Nasser
U.S. Department of Energy
Federal Energy Management Program
Mailstop EE-2L
1000 Independence Avenue, S.W.,
Washington, DC 20585-0121

RE: Comments of the Responsible Energy Codes Alliance on Energy Standard for New Federal Commercial and Multi-Family High-Rise Residential Buildings and Energy Standards for New Federal Low-Rise Residential Buildings, EE-RM/STD-02-112 and RIN 1904-AB13.

Dear Mr. Nasser,

The Responsible Energy Codes Alliance supports the Department's proposal to adopt the 2004 International Energy Conservation Code (*IECC*) and ASHRAE/IESNA Standard 90.1-2004 by reference for new residential and commercial federal buildings. RECA also supports the Department's requirement that designs for new federal buildings must reduce energy consumption levels by at least 30 percent compared to the current model codes, if life-cycle cost-effective.

However, we have two suggestions to improve the final rule. First, we believe that the Department should consider making a single generic determination that a 30 percent (or more if feasible) reduction in energy consumption would be life-cycle cost effective and consider mandating that all new buildings meet this higher standard (rather than requiring a case-by-case, building-by-building life cycle cost analysis). Only if the Department cannot make that positive determination should it resort to the building-by-building approach proposed in the rule. Second, we recommend that the Department consider recognizing the 2004 IECC as an alternative to ASHRAE/IESNA Standard 90.1-2004.

RECA is a consortium of energy efficiency advocates, product and equipment manufacturers, and trade associations. We believe that a mandatory, state-of-the-art, uniform building energy code is the best mechanism for ensuring quality construction that adequately conserves available energy resources. Although RECA generally supports the adoption of the most recent version of the *IECC*, given the statutory mandate in this matter, we believe that the Department has correctly set the 2004 *IECC* as the minimum standard for the construction of federal residential buildings and the baseline for determining a performance level that is 30 percent better than this code. RECA members have also actively participated in the ICC process since its inception and have been involved in the model energy code development process for two decades. We are very familiar with the *IECC*, and RECA members have been promoting the *IECC* nationwide for many years. A list of RECA members is enclosed.

Section 109 of the Energy Policy Act of 2005 adopted two standards – the 2004 *IECC* and ASHRAE/IESNA 90.1-2004 – as the baseline energy efficiency codes for new federal construction. Congress also required that the Secretary of Energy establish standards that revise federal building energy efficiency standards requiring that “if life-cycle cost-effective for new Federal Buildings -- buildings be designed to achieve energy consumption levels that are at least 30 percent below the levels established in [the referenced standards]” Although this determination could be made on every building individually (estimated by the Department to be 2000 low-rise residential units and 28 million square feet of commercial buildings every year), we believe a more reasonable approach would be to set a uniform efficiency standard for all federal construction, at least 30 percent above the baseline, based on life-cycle costing for all estimated federal construction. This approach could add more clarity and would eliminate the necessity for future analysis on a building-by-building basis. We also believe that it would be consistent with Section 109. However, in the event that the Department cannot determine that a 30 percent overall generic improvement would be life-cycle cost-effective, then the Department could resort to the approach in the proposed rule of requiring a building-by-building analysis.

The 2004 *IECC* is intended to be equal to or more stringent than ASHRAE 90.1 in the realm of buildings other than low-rise residential. We recommend that the Department assess this factor and consider whether to recognize the 2004 *IECC* as an alternative to ASHRAE 90.1 as a minimum standard. The 2004 *IECC* contains a stringent, simplified prescriptive path for these types of buildings and could make compliance easier in certain cases, while increasing energy efficiency. The Department should also update the 2004 *IECC*'s Referenced Standards to include ASHRAE 90.1-2004 in order to maintain consistency with the Energy Policy Act of 2005 (the 2004 version of the *IECC* references the 2001 ASHRAE standard).

We support the Department's proposed adoption of the 2004 *IECC* and ASHRAE/IESNA 90.1-2004 as minimum energy efficiency performance standards for federal buildings. We also view this rulemaking as an opportunity for the Department to lead the nation in increasing energy efficiency in buildings, well beyond the current requirements of the national model codes. Standards adopted by the Department of Energy often spur the development of similar or better standards at a state level. Given

the current energy crisis faced by the nation, we are hopeful that the Department and states will continue to seek out ways to reduce energy consumption. Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read "E. Lacey", written on a light-colored rectangular background.

Eric Lacey
Chairman

RECA

RESPONSIBLE ENERGY CODES ALLIANCE

RECA is a broad-based consortium of energy efficiency professionals, product and equipment manufacturers, and trade associations with expertise in the adoption, implementation and enforcement of building energy codes nationwide. RECA is dedicated to improving the energy efficiency of homes throughout the U.S. through greater use of energy efficient practices and building products. It is administered by the Alliance to Save Energy, a non-profit coalition of business, government, environmental and consumer leaders that supports energy efficiency as a cost-effective energy resource under existing market conditions and advocates energy-efficiency policies that minimize costs to society and individual consumers.

Air Barrier Association of America

Alliance to Save Energy

American Chemistry Council

American Council for an Energy-Efficient Economy

Cardinal Glass Industries, Inc.

CertainTeed Corporation

Chemical Industry Council of Illinois

Guardian Industries Corporation

Johns Manville Corporation

Knauf Insulation

Midwest Energy Efficiency Alliance

National Fenestration Rating Council

Northeast Energy Efficiency Partnerships, Inc.

North American Insulation Manufacturers Association

Owens Corning

Pactiv Corporation

Polyisocyanurate Insulation Manufacturers Association

PPG Industries, Inc.

Southwest Energy Efficiency Project

February 2, 2007

Mr. Cyrus Nasser
U.S. Department of Energy
Federal Energy Management Program
Mailstop EE-2L
1000 Independence Avenue, SW.
Washington, DC 20585-0121

COMMENTS REGARDING:

Energy Conservation Standards for New Federal Commercial and Multi-Family
High-Rise Residential Buildings and New Federal Low-Rise Residential Buildings
Docket No. EE-RM/STD-02-112, RIN 1904-AB13

Dear Mr. Nasser:

APA – The Engineered Wood Association has several areas of concern with the proposed Federal Residential Standard. Our most important comment is that DOE should use the 2006 IECC / IRC (or just 2006 IECC) as the baseline for the Federal Residential Standard, not the 2004 IECC Supplement. The use of the 2006 codes, the prevailing national model codes for energy, would eliminate our concerns.

Firstly, the 2004 IECC Supplement is not a code and is not widely accepted in code jurisdictions across the United States. The 2006 IECC / IRC are the current energy codes being adopted throughout the country.

Secondly, the minimum levels of prescriptive wall insulation specified in the 2004 IECC Supplement is R15 and R21. These values are unjustified and should be revised to require R13 and R19 wall insulation, as is the requirement in the 2006 IECC / IRC for several reasons.

- 1) The DOE's own initial report on the cost savings of the higher R-values indicated insignificant energy savings across all climate zones. Other reports funded by insulation industry sources indicated energy saving, but did not take into account the cost impacts of meeting the structural bracing requirements of the building code.
- 2) Meeting the higher wall insulation R-values adds significant cost to the structure.
 - a. If R15 and R21 cavity insulation is used, the additional cost of that insulation was shown to be 30% higher than the R13 and R19 insulations in areas where those higher wall system R-values are already required. Also the use of insulations such as spray foam and

- cellulose would not be allowed as they can not meet the R15 and R21 levels in the common wall-cavity thicknesses of 3½" and 5½".
- b. If foam wall sheathing products are used to meet the higher wall insulation levels, builders would have significant added costs in meeting the wall bracing requirements of the IRC (minimum wall bracing segment lengths of 48") in order to build the designs of homes commonly constructed. Such costs would include:
 - i. Re-designing the structures to accommodate necessary wall bracing segments or engineering each design with shear walls. Bear in mind that the bracing/ shearwall requirements for structures are not elective. They are life-safety issues required to prevent structural collapse during designed events.
 - ii. Using proprietary and expensive prefabricated narrow bracing units.
 - iii. Applying the foam sheathing over the structural sheathing.

Please note that for the above reasons and more, the subject values in the 2004 IECC Supplement were changed during the development of the 2006 IECC/IRC.

For further information regarding the issue with structural wall-bracing, I would refer to the documents previously sent to DOE from APA or www.wallbracing.org.

For consistency with the prevailing voluntary consensus codes and for more sensible energy conservation, DOE should allow the use of the 2006 IECC as an option for commercial and both high-rise and low-rise residential structures.

Sincerely,

Mark C. Halverson
APA – The Engineered Wood Association

Mr. Cyrus Nasser
U.S. Department of Energy
Federal Energy Management Program
Mailstop EE-2L
1000 Independence Avenue, SW.
Washington, DC 20585-0121

February 2, 2007, revised

COMMENTS REGARDING:

Energy Conservation Standards for New Federal Commercial and Multi-Family High-Rise Residential Buildings and New Federal Low-Rise Residential Buildings
Docket No. EE-RM/STD-02-112, RIN 1904-AB13

Dear Mr. Nasser:

We have a variety of concerns with the proposed Federal Residential Standard. Our most important comment is that DOE should use the 2006 IECC / IRC (or just the 2006 IECC) as the baseline for the Federal Residential Standard, not the 2004 IECC Supplement. The use of the 2006 codes, the prevailing national model code(s) for energy, would eliminate or moderate most of our other comments.¹

We are concerned that DOE has apparently assumed that the 2004 IECC Supplement is in wide use, such that DOE described the 2004 IECC Supplement as the “prevailing national voluntary building energy code for residences” in the Federal Register Notice. This is simply not correct. The 2004 IECC Supplement is a supplement rather than a code and is used virtually nowhere. In adopting what OMB would probably term a “government-unique standard”, DOE:

- incurs additional regulatory burdens that have not been met,
- incurs an obligation to support a “government-unique standard” when DOE has not shown itself able to adequately support the existing Federal Residential Standard or meet its requirement to do determinations on energy codes (not supplements) within the legally specified period,
- takes an action that will confuse jurisdictions moving towards new energy codes,
- adds a list of comments concerning code changes that have occurred since the 2004 IECC supplement, comments which DOE needs to individually review and decide on,
- creates its own non-consensus process that mimics the function of the ICC code hearing process, after EPACT defined the ICC process as a consensus process, and
- violates the spirit of both Section 12(d) of P.L. 104-113, the "*National Technology Transfer and Advancement Act of 1995*" and OMB's Circular A-119².

DOE is very well aware that the ICC has a three-year code development cycle. The cycle includes two public comment periods, each followed by a hearing. The 2004 changes to

¹ We reserve the right to provide additional comments in the future.

² OMB Circular A-119-- dated February 10, 1998 titled "*Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*" <http://www.whitehouse.gov/omb/circulars/a119/a119.html>

the IECC are, again, a supplement, not a code. Although it is legal to adopt a supplement, most consider it an intermediate step on the way to a code. Clearly, the 2005 legislation names the 2004 IECC Supplement as the basis of the new Federal Residential Standard. Just as clearly, the 2006 IECC / IRC codes were not available when the law was passed. Congress selected the only existing publication incorporating DOE's major changes to the energy code in the IECC and IRC. DOE routinely encourages states and localities to adopt newer versions of the energy codes, presuming a "positive determination". This function is specified for DOE in the EPACT legislation. It seems odd for DOE not to follow its own advice and to adopt a supplement, a document that DOE has not advised anyone else to adopt, and does not plan to do a determination on. After more than ten years of not updating the Federal Residential Standard, this DOE proposal chooses to place the Federal Government out of step with the states that adopt the codes and the codes community.

The Federal Government has both law and policy that encourage adoption of the same "voluntary consensus standards" as are used elsewhere. The 2004 IECC Supplement is neither a code nor a standard. There are important benefits for the Federal Government being consistent with the rest of the code development community by adopting the prevailing national model code(s). OMB's Circular A-119 gives practical direction for complying with the National Technology Transfer and Advancement Act of 1995, the Circular "*directs agencies to use voluntary consensus standards in lieu of government-unique standards except where inconsistent with law or otherwise impractical.*"³ "*Many voluntary consensus standards are appropriate or adaptable for the Government's purposes. The use of such standards, whenever practicable and appropriate, is intended to ... Eliminate the cost to the Government of developing its own standards and decrease the cost of goods procured and the burden of complying with agency regulation ...*"⁴ and helps "*Further the policy of reliance upon the private sector to supply Government needs for goods and services.*"⁵

As mentioned above, DOE is poised to specify a "government-unique standard" in violation of the spirit of OMB A-119 and the spirit of National Technology Transfer and Advancement Act of 1995. Major efforts towards unifying national codes and standards have been made by many parties. The three regional code organizations took the unprecedented step of merging into one organization, the ICC, in order to create a more uniform and usable set of national codes. Many associations, jurisdictions and companies support the concept of unified national model codes. Additional uniformity arises from the adoption of codes and not supplements. Does DOE want to stand in the way of such unity and consensus? Normally, Federal actions and agencies choose to participate within the national model code process, as is encouraged by National Technology Transfer and Advancement Act of 1995. FEMA and DOE routinely participate in the process of developing the national model codes. For example, DOE currently has a major effort concerning hydrogen-related building code requirements.

³ OMB A-119

⁴ OMB A-119

⁵ OMB A-119

It may be convenient for DOE to call the 2004 IECC Supplement a standard or code; however the 2004 IECC Supplement is simply not a standard or code. It is a supplement. DOE illustrates this difference when it does not do determinations on supplements, nor does DOE push this to states and jurisdictions to use supplements.

DOE's terminology is confusing. The Federal Register notice refers variously to the "2004 Supplement to the 2003 IECC", "2004 IECC Supplement", "2004 International Energy Conservation Code (IECC)" and "IECC standard". Users and readers will be confused with this terminology and may assume several different documents are being discussed.

DOE's statements that the 2004 IECC Supplement is used extensively are simply wrong. In the Federal Register, DOE stated: "*Section 109 replaced the minimum standards referenced in section 305(a)(2)(A) with **references to updated building codes that are widely used today.** For residential buildings, CABO Model Energy Code, 1992, was replaced with the 2004 International Energy Conservation Code (IECC).*" "... *the **prevailing national voluntary building energy codes, which also are the minimum requirements for the interim final rule.***"⁶ DOE is incorrect. The 2004 IECC Supplement is seldom used at best and most certainly is not the prevailing national voluntary building energy code. DOE's own web site does not list a single state using the residential 2004 IECC Supplement⁷. Nor does the ICC State Code Adoption web page list any states using the 2004 IECC Supplement. Of the 1700 jurisdictions listed on the ICC web site, three local jurisdictions are listed as having adopted the 2004 IECC Supplement-- Phoenix, St. Louis and Trinidad Colorado. We believe Phoenix and St. Louis have or are "unadopting" the 2004 IECC Supplement. Plans for the only remaining jurisdiction (Trinidad, CO, population 10-12,000) are unclear. Jurisdictions considering new codes are now focusing on the 2006 codes.

In its justification for using the 2006 codes DOE should point out that the 2006 codes were not available when the 2005 law was written, that EPACT encourages DOE to evaluate and promote new versions of the energy code, and that the 2006 codes are the obvious choice. DOE should move to the 2006 IECC / IRC as the baseline for the Federal energy code.

DOE gave only 30 days of review prior to making the interim final rule effective. While this may be entirely legal, it is not good policy. Given the history of 2004 IECC Supplement, DOE should have known there would be significant issues with adopting the 2004 IECC Supplement and should have allowed more time for discussion. Adopting a supplement rather than a code is so unusual that DOE should have anticipated the need to respond to comments before having the new Federal Residential Standard take effect.

DOE's sense of urgency seems odd. The last update to the Federal standards was ten or more years ago. Many deadlines have come and gone. If DOE really intends on putting a

⁶ None of the bold text in this letter is in the original citations. All **bold text** is added for emphasis and clarity.

⁷ http://www.energycodes.gov/implement/state_codes/state_status_full.php

standard in place as soon as it can, then it should adopt a real edition of the code rather than a supplement. Adopting a real edition of the code will remove significant opposition and allow the use of existing tools for the 2006 codes; thereby speeding the implementation and adoption of the new Federal Standard.

DOE lists RESNET as a source of support materials. This may be misleading. DOE needs to note that RESNET materials do not cover all the requirements of the 2004 IECC Supplement (or any other version of the I-codes). More importantly, DOE should note that RESNET energy calculations, including the HERS scores, that are based on “normalized modified end use loads” (NMEUL)⁸ are not compatible with the performance requirements of any version of the IECC code or supplement. NMEUL is not consistent with the performance calculations specified in Section 404 of the IECC. Further, the use of NMEUL is not consistent with any of the four methods for showing cost-effectiveness that DOE lists in 10 CFR part 436. In addition, the assumptions in NMEUL are out of date with respect to the changes in Federal equipment efficiency standards⁹. Since NMEUL is used in the HERS ratings, those HERS ratings are also incompatible with showing a residence is 30% above any version of the IECC or IRC. If EPA’s Builder Option Packages (BOPs) were developed based on HERS scores or using NMEUL, they are also incompatible with the energy code.

If DOE pushes the Federal government to have a “*government-unique standard*”, a specific version used by no other jurisdiction, then DOE creates several obligations for itself. DOE is obligated to provide the tools / training for any “government-unique standard” it creates. DOE’s track record of support for the existing Federal Residential Standard is poor. For example, although currently specified by law, COSTSAFR has been allowed to lapse into obsolescence. DOE’s web site gives another hint of how out of date it is when it says “*DOE is currently updating the Federal residential code. A proposed rulemaking for a new version of the code was published in the **May 2, 1997**, edition of the Federal Register. A revised proposed rule is currently being prepared. Information about that proposal will be posted at this site as available.*”¹⁰ The “current” version of COSTSAFR is not even adapted to run under the Windows™ operating system, and has not been updated for the prevailing Federal Efficiency requirements. In light of this inactivity, it makes no sense to assume that DOE can now support the Federal Residential Standard, nor is there any reason to believe that Congress would supply the required budget. If DOE goes to 2006 I-codes then many DOE and private sector tools will be available, including some that are currently available.

The list of resources provided in the Federal Register notice is not particularly helpful. Most of this list and more could be found on DOE’s web site. Reiterating existing Fed advice, i.e. use Energy Star appliances, provides nothing new. In the Federal Register, DOE

⁸ 2006 Mortgage Industry National Home Energy Rating Systems Standards
<http://www.resnet.us/standards/mortgage/default.htm>

⁹ The HERS Rating Method and the Derivation of the Normalized Modified Loads Method, FSEC-RR-54-00, Table E. <http://www.fsec.ucf.edu/en/publications/html/FSEC-RR-54-00/index.htm>

¹⁰ http://www.energycodes.gov/federal/federal_codes_res.stm

stated “*The agencies must try to find a design that reduces energy consumption by a total of 30 percent or more without increasing the planned building’s expected life-cycle cost. DOE intends to provide additional guidance and tools to assist Federal agencies in meeting these new building design requirements.*” In light of previous inaction, it seems unlikely that DOE will provide tools in a timely manner, given, again, for example DOE’s support provided with COSTSAFR. Tools should be available now, as the interim final standard is mandatory now. If DOE continues to use the 2004 IECC Supplement as the baseline, then DOE should detail its plans and schedule to update those tools and/or to create tools and materials to support the new version of Federal Residential Standard, including setting dates for tool availability and listing the tools to be used in the interim.

As noted in the Federal Register notice Executive Order 13211 titled “*Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*” prevailing regulations require Federal agencies to prepare and submit to the Office of Information and Regulatory Affairs, a Statement of Energy Effects for any proposed significant energy action. The DOE Federal Register notice further states that a “... *significant energy action is defined as any action by an agency that promulgated or is expected to lead to promulgation of a final rule, and that: (1) Is a significant regulatory action under Executive Order 12866, or any successor order;*” Again DOE’s Federal Register notice has already declared this rule a “*significant regulatory action*” under section 3(f)(1) of Executive Order 12866. DOE’s Federal Register notice continues “*and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy, or (3) is designated by the Administrator of OIRA as a significant energy action. For any proposed significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.*” DOE argued that “*This interim final rule would not have a significant adverse effect on the supply, distribution, or use of energy and, therefore, is not a significant energy action. Accordingly, DOE has not prepared a Statement of Energy Effects.*”

DOE’s statements that it is using “*references to updated building codes that are widely used today*” and the implication that it is using the “*prevailing national voluntary building energy codes*” are demonstrably false. In contrast, we believe establishment of a “government-unique standard” would introduce confusion in energy codes by producing a variation of the energy code used by most jurisdictions. This confusion is heightened by the fact that DOE has an important role in developing, implementing and dispersing information, training, and materials that assist a broad range of energy code users. By increasing confusion in the energy codes arena, DOE’s actions would have a “significant adverse effect on the ... use of energy”. Therefore, we believe that DOE is required to evaluate “reasonable alternatives”¹¹ such as adopting the 2006 IECC / IRC codes (or just the 2006 IECC code) and that DOE is required to prepare a Statement of Energy Effects by

¹¹ Furthermore OMB states that “*A good regulatory analysis should include ... an examination of alternative approaches, and ... costs—quantitative and qualitative—of the proposed action and the main alternatives identified by the analysis.*”

Executive Order 13211 before it proceeds to adopt the 2004 IECC Supplement. Adopting the 2006 codes as the baseline is an obvious alternative that makes practical sense and is favored by law and policy, as outlined above. Given that the 2006 code has been available for almost a year, it is hard to understand why DOE would not evaluate that alternative. If the Federal Residential Standard is the 2004 IECC Supplement, then DOE should discuss the cost of tools and materials needed to support a “government-unique standard”. If DOE chooses the 2006 IECC code as the Federal Residential Standard, we do not believe DOE would be required to file a State of Energy Effects and would also have considered the most “reasonable alternative”.

DOE should be well aware that the primary agencies that build federally owned housing are military and that each has its own efficiency program. It would be useful for DOE to consider blessing those programs if they meet the Federal Residential Standard goals. This evaluation does not need to occur prior to DOE specifying the new Federal Residential Standard.

If DOE fails to use the “voluntary consensus standard”, it likely incurs an obligation to report that action to the OMB. *“All federal agencies must use voluntary consensus standards in lieu of government-unique standards in their procurement and regulatory activities, except where inconsistent with law or otherwise impractical. In these circumstances, your agency must submit a report describing the reason(s) for its use of government-unique standards in lieu of voluntary consensus standards to the Office of Management and Budget (OMB) through the National Institute of Standards and Technology (NIST).”*¹²

If DOE continues to use the 2004 IECC Supplement, then DOE needs to systematically consider all changes made since the publication of the 2004 IECC Supplement. This includes changes that created the 2006 IECC code, possibly the prevailing 2007 changes, and planning to evaluate future changes. DOE’s process would be partly duplicating the ICC code development process. If DOE was to use the 2006 codes, then it would be using the current voluntary consensus standard and could mostly rely on, and participate in, the normal code making process to determine the worthiness of proposed code changes.

If DOE retains the 2004 IECC Supplement as the baseline, there are several changes that need to be made. DOE is proposing a standard that includes prescriptive specifications for R15 and R21 wall insulation. These should be revised to require R13 and R19 wall insulation, as was done in the 2006 IECC / IRC. As DOE is well aware, the wall insulation R-values were debated extensively in the update to 2004 IECC Supplement. In the final vote, the collected code officials from all parts of the country voted 80% to 20% to specify R13 and R19 wall insulation. Several persuasive arguments were made, including the arguments against specifying insulation levels that seem to be selected to promote one type of insulation (fiberglass) over its competitors (cellulose and spray foam). Substantial materials were provided in response to DOE’s earlier request for information on wall insulation R-values, as posted on DOE’s web site.¹³ It hardly seems necessary to again

¹² OMB A-119

¹³ <http://www.energycodes.gov/>

provide DOE will all the supporting materials concerning the proprietary nature and structural issues associated with these wall insulation R-values. Given the intensity of that discussion, it seems unlikely DOE wants to revive the wall R-value debate by choosing a prescriptive R-value that is proprietary.

DOE should eliminate section 402.5.1 of the 2004 IECC Supplement. These are termed “hard limits” for fenestration. The hard limits impose an arbitrary limit on design without any net gain in energy efficiency. These run contrary DOE’s Federal Register statement: *“DOE believes that Federal agencies should be given the flexibility necessary to determine the most effective ways to achieve energy savings above that of the incorporated standards, rather than relying on prescriptive requirements that may not be appropriate in all cases.”* Likewise the hard limits run contrary to OMB’s guidance that *“In using voluntary consensus standards, your agency should give preference to performance standards when such standards may reasonably be used in lieu of prescriptive standards.”*¹⁴ Implementing fenestration hard limits more stringent than those found in any existing code runs counter to both DOE’s and OMB’s preference for flexibility and performance in codes.

These limits on fenestration U-factor also apply to skylights. The 2004 IECC Supplement has hard limits that are lower than the prescriptive requirement for skylights (0.60). This makes no sense. In an addition or renovation where the only change in fenestration was the skylights, this limit would eliminate most skylight products on the market, even if the renovation or addition was energy efficient. This error in defining the skylights with a hard limit below the main requirement was fixed in both the 2006 IECC and 2006 IRC codes.

The fenestration hard limits are not compatible with specialized products such as glass block, garden windows, and hurricane-impact metal windows. Does DOE intend to eliminate these products in some applications? Almost all glass block, garden windows and some hurricane resistant glass cannot meet this limit. The hard limits also ignore the alternative benefits of specialized products. Glass block is used for security and fire benefits, and metal frames in windows can contribute helpful structural and impact resistance properties in the hurricane zones, which extend up the east coast through Zone 5. There is broad consensus that the hard limits in the 2004 IECC Supplement are flawed, which is reflected in their modification or elimination in all subsequent codes. We recommend elimination of Section 402.5.1.

DOE is proposing a standard that specifies R8 duct insulation, including R8 duct insulation for return ducts. Economic analysis has shown the R8 duct insulation for return ducts is far from economic.¹⁵ The duct R-value requirement was reduced to R6 for all but attic supply ducts in both the IECC and IRC in the first hearing of the current code cycle.¹⁶ DOE should do the same for its 2004 IECC Supplement, if promulgated by the Federal Standard.

¹⁴ OMB A-119

¹⁵ "Impacts of Residential Duct Insulation on HVAC Energy Use and Life-Cycle Cost to Consumers." ASHRAE Transactions 102 (1). AT-96-13-4.

¹⁶ Code change EC62-06/07

The 2004 IECC Supplement specifies that air handlers be sealed, but does not specify what “sealed” means. Given that substantial energy efficiency is available from sealing the air handlers, DOE should adopt the metric that was accepted in the most recent code cycle of the IECC.¹⁷ DOE itself proposed a similar metric.

Extensive changes are being made for vapor retarder requirements, based on the work of the Building Science Corporation and DOE’s Building America program. DOE should incorporate those changes in its Federal Residential Standard.

DOE should review all the prevailing changes from the previous code cycles. For example, it should include EC1-05/06, which adapts the marking and insulation reporting requirements to be specific to spray foam. It should also include EC9-05/06, which was DOE’s correction for climate zone errors in the 2004 IECC Supplement

The IRC is the most widely adopted residential code. There are only small differences between the IRC and residential IECC requirements. Some energy related requirements reside only in the IRC, for example, the HVAC sizing requirements, unvented attics as an option, and multiple requirements on how ducts are constructed. For consistency, DOE should allow the use of both the IRC and IECC as its baseline standard.

The commercial requirements look reasonable. For consistency with the prevailing voluntary consensus codes, DOE should allow the use of the 2006 IECC code as a baseline option for commercial structures.

Thank you for taking the time to consider our comments.

Sincerely

Gabe Farkas
V.P. Engineering
Icynene Insulation Systems
6747 Campobello Road
Mississauga ON
L5N 2L7 Canada
(905) 363-4040 ext. 209

Mark Henderson
President
Nu-Wool Co., Inc.
2472 Port Sheldon St.
Jenison, MI 49428
616-669-0100

Craig Conner
Building Quality
Box 1507
Richland WA, 99352
509-943-8934

¹⁷ Code change EC64-06/07



ASHRAE

Technology for a Better Environment

1791 Tullie Circle, NE • Atlanta, GA 30329-2305 USA • Tel 404.636.8400 • Fax 404.321.5478 • <http://www.ashrae.org>

Terry E. Townsend, P. E.

President

Reply to: TOWNSEND ENGINEERING, INC.
P. O. Box 23526
Chattanooga, TN 37422-3526
☎ 423-855-1184
Fax 423-855-1185
E-mail terry@townsend-engineering.com

February 2, 2007

Cyrus Nasser
U.S. Department of Energy
Federal Energy Management Program
Mailstop EE-2L
1000 Independence Ave., SW
Washington, DC 20585-0121

Re: Energy Standard for New Federal Commercial and Multi-Family High-Rise Residential Buildings and Energy Standards for New Federal Low-Rise Residential Buildings, EE-RM/STD-02-112 and RIN 1904-AB13.

Dear Mr. Nasser:

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), founded in 1894, is an international organization of 55,000 persons. ASHRAE fulfills its mission of advancing heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world through research, standards writing, publishing and continuing education. In recognition of the impact energy use by buildings has on the economy and the environment, since 1975, ASHRAE has developed and maintained the premier energy standards for buildings (ANSI/ASHRAE/IESNA Standard 90.1 and ANSI/ASHRAE/IESNA Standard 90.2).

ASHRAE commends the Department of Energy's (Department) recognition of the utility of Standard 90.1 and the ability to go beyond this baseline using currently available technology. As an owner and operator of a significant portion of the nation's real estate, we applaud the Federal government's leadership in promoting building energy efficiency. ASHRAE, through its guidance documents, other publications and educational offerings, is committed to providing the tools necessary to give all Americans the ability to meet their energy efficiency goals.

These comments address the following topics:

1. Applicability of EPA Act Section 109
2. Life-Cycle Cost Considerations for Going Beyond 30 Percent
3. Utilization of ANSI/ASHRAE/IESNA Standard 90.2-2004
4. Compliance and Recordkeeping
5. Education and Training
6. Additional Section 109 Provisions

Applicability of EPA Act Section 109

Under the interim final rule interpreting Section 109 of the Energy Policy Act of 2005 (P.L. 109-58)(EPA Act), provisions are applicable to "new Federal commercial and multi-family high-rise residential [and] new Federal low-rise buildings, for which design for construction begins on or after the effective date of [the] interim final rule." Given the provisions of the interim final rule and the statute, it is unclear whether the final rule is applicable to federally leased buildings and major renovations.

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

A N I N T E R N A T I O N A L O R G A N I Z A T I O N

According to the Public Buildings Service of the General Services Administration (GSA), nearly half of the 342 million square feet of office space controlled by GSA is leased in privately-owned facilities. Due to this significant proportion of leased space, the interim final rule should be clarified to explicitly incorporate both federally owned and federally leased facilities. This will allow the maximum effectiveness of the rule. Furthermore, privatized housing for the Department of Defense also should be covered under the provision.

Significant precedence exists for the inclusion of major renovations within the interim rule. For example, under the Architectural Barriers Act, "buildings" are defined as "any building or facility (other than (A) a privately owned residential structure not leased by the Government for subsidized housing programs and (B) any building or facility on a military installation designed and constructed primarily for use by able bodied military personnel) . . . (1) to be constructed *or altered* by or on behalf of the United States." (42 U.S.C. §§4151 et.seq.)(emphasis added). In addition, the Interagency Security Criteria, which federal agencies use to ensure the safety and security of federal facilities, is applied to both new construction and major renovations (PBS Instructional Letter, PBS 11-02-01). We therefore urge clarification of the interim final rule to explicitly include both new construction and major renovations.

Furthermore, we are concerned that the interim final rule may have the effect of actually *reducing* energy efficiency requirements for major renovations. Prior to the effective date of this interim final rule, 10 CFR 434 (Energy Code for New Federal Commercial and Multi-Family High Rise Residential Buildings) required that both new construction and "[a]n addition that adds new space with provision for a heating or cooling system, or both, or for a hot water system; or (3) [a] substantial renovation of a building, involving replacement of a heating or cooling system, or both, or hot water system, that is either in service or has been in service" (10 CFR 434.101.1.1) be subject to the energy efficiency requirements of the Part, which generally follow ANSI/ASHRAE/IESNA 90.1-1989.

The interim rule, however, changes Part 434 to make it applicable only to buildings "for which design for construction began before January 3, 2007." For buildings for which design for construction begins after the effective date, which are covered by the new Part 433, no equivalent language regarding additions or renovations is included. Thus, major renovations started after January 3, 2007, would not be subject to the energy efficiency provisions of either Part. Therefore, ASHRAE strongly urges the Department to clarify that the interim final rule applies to both new construction and major renovations by incorporating the scoping language in 10 CFR 434.101.1.1 into the new Part 433.

Life-Cycle Cost Considerations for Going Beyond 30 Percent

Under the interim rule, Federal buildings are required to "achieve a level of energy efficiency 30 percent greater than [ASHRAE 90.1-2004 and the 2004 IECC] when life-cycle cost effective." Although this life-cycle cost-effective qualification matches language in Section 109 of EPA Act, we note that President Bush's Executive Order 13423 of January 24, 2007, "Strengthening Federal Environmental, Energy, and Transportation Management," orders agencies to "ensure that (i) new construction and major renovation of agency buildings comply with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings* set forth in the *Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding* (2006)." The cited MOU already requires signatories to reduce the energy cost budget of new construction and major renovations by 30 percent compared to the baseline building performance rating in ANSI/ASHRAE/IESNA Standard 90.1-2004.

The interim final rule states that the Department believes it cannot require agencies to achieve energy efficiency beyond the 30 percent due to the specifications in Section 109 of EPA Act. The statute's framework offers sufficient latitude to allow agencies to calculate the life-cycle cost-effectiveness of designs that go beyond 30 percent. Should the Department not agree with allowing agencies to go beyond 30 percent greater energy efficiency, the Department should require agencies to calculate the maximum energy efficiency that can be achieved while remaining cost-effective and report that information to the Department. Utilizing these

reports and other resources, the Department should develop a resource for agencies and others that demonstrates how energy savings greater than 30 percent can be achieved in ways that are life-cycle cost effective.

Utilization of ANSI/ASHRAE/IESNA Standard 90.2-2004

We direct your attention to Part 435 (Specifically 435.4) entitled "Energy Efficiency Standard for new Federal Low-Rise Residential Buildings" and suggest that consideration be given to ANSI/ASHRAE/IESNA Standard 90.2-2004 "Energy-Efficient Design of Low-Rise Residential Buildings." It should be considered as an alternate to the current energy efficient performance standard requirements.

This standard has a number of benefits worth considering; 1) the analysis used to evaluate the criteria shown in the document was based on simple payback economics; 2) reduction in the first costs of HVAC equipment with improvements in the envelope criteria and the cost penalties for lost floor space due to thicker walls; 3) first costs for all of the opaque and fenestration options in the analysis were updated to reflect current values; 4) three options are available to demonstrate compliance (e.g. prescriptive, annual energy cost method, and envelope performance path trade-off method); and 5) it is a Standard developed under a consensus promulgation method (e.g. American National Standards Institute).

The three methods permitted to demonstrate compliance allow the user options to consider when designing a low-rise residential building. The prescriptive method is just that, a method where one may take the simple approach by selecting the appropriate minimum requirements for each aspect of the envelope and equipment. The annual energy cost method is a compliance path method that recognizes innovative designs, materials, and equipment when they cannot adequately be evaluated under the prescriptive method. The envelope performance path trade-off method allows the user the option of demonstrating compliance by trading the performance of individual components.

Compliance and Recordkeeping

As currently written, the interim final rule does not provide a mechanism for assuring agency compliance nor does it provide a means of measuring the effectiveness of agencies' efforts to reduce energy usage in their buildings. To ensure that agencies meet the full intent of Congress in its passage of Section 109, we encourage the Department to include the following requirements in the rule:

1. While design technologies such as Building Information Modeling (BIM) can provide assumptions about energy targets during the design process, the only way to ensure that federal buildings covered under this provision meet intended efficiency targets is to require agencies to measure energy savings.
2. Agencies should be required to submit the following information to the Department:
 - a. An analysis of the expected (i.e., at design) energy savings in relation to an otherwise identical building meeting the minimum criteria established in the applicable standard.
 - b. An analysis of the actual building energy consumption and the savings relative to the baseline established by the relevant standard after one year in operation. Such an analysis should be submitted to the Department within a reasonable time following the year in operation.
 - c. A description of the steps an agency plans to take if actual energy savings do not achieve the level of energy efficiency required by the applicable standard.
 - d. An analysis of the maximum energy efficiency that can be achieved while remaining cost effective.
 - e. An explanation of which life-cycle cost-analysis method from 10 CFR 436 that the agency used to measure life-cycle cost-effectiveness, and the results of that analysis.

- f. The extent to which the agency incorporated Energy Star or Federal Energy Management Program (FEMP) designated products as specified in section 104 of the Energy Policy Act of 2005.
3. The Department will work to develop a separate Commercial Buildings Energy Consumption Survey (CBECS) sample that includes federal buildings that have been designed and constructed following the effective date of this provision.
4. To the extent possible under other statutes or security concerns, the energy analysis and the technologies and practices used to achieve the target energy savings should be made available to the public. Such a database would provide the engineering and design community with a valuable resource for transfer of energy efficiency technology and practice into the private sector.

Under Section 103 of EAct and the MOU signed by the Department and many other agencies, tracking performance and optimizing performance already are required. Such a requirement should be incorporated into the final rule. Under the MOU, agencies are required to “install building level utility meters in new major construction and renovation projects to track and continuously optimize performance. Compare actual performance data from the first year of operation with the energy design target. After one year of occupancy, measure all new major installations using the Energy Star® Benchmarking Tool for building and space types covered by Energy Star®. Enter data and lessons learned from sustainable buildings into the High Performance Buildings Database.”

Education and Training

Critical to the success of this initiative is the proper education and training of agency personnel, facility managers, designers and contractors to provide accurate, up-to-date information on the energy efficiency targets and how to achieve maximum energy efficiency. We are pleased that the Department recognizes the utility of ASHRAE’s existing guidance documents in meeting the requirements of the rule.

The *Advanced Energy Design Guides* (AEDGs) are a critical tool for achieving energy conservation 30 percent above the baseline established by Standard 90.1. However, it should be noted that the AEDGs currently utilize Standard 90.1-1999 as a baseline (Standard 90.1-2004 is estimated to be five percent more stringent than Standard 90.1-1999). Details on the AEDG series are available at <http://www.ashrae.org/aedg> (note shortened link from 71 FR 70279).

ASHRAE’s *Standard 90.1-2004 User’s Manual* provides useful information and detailed instructions for designing commercial and high-rise residential buildings that apply ANSI/ASHRAE/IESNA Standard 90.1-2004. In addition, the manual: encourages the user to apply the principles of effective energy-conserving design when designing buildings and building systems; offers information on the intent and application of Standard 90.1; illuminates the Standard through the use of abundant sample calculations and examples; streamlines the process of showing compliance; provides standard forms to demonstrate compliance; and provides useful reference material to assist designers in efficiently completing a successful and complying design.

Future standards, guidance and educational tools will continue to be developed to further increase the energy conservation achievable in buildings. ASHRAE is in the process of developing AEDGs targeting a 50 to 70 percent reduction in a building’s energy use. Standard 90.1 will continue to be revised with updated versions in 2007 and 2010. The ASHRAE Board of Directors has formally committed to the goal of making the 2010 version of Standard 90.1 30 percent more stringent than the 2004 version, working within the standard consensus process. In conjunction with its commitment to the Architecture 2030 Challenge, ASHRAE also will provide the tools necessary to achieve a net zero energy building by 2020.

In addition to the guidance already identified, the Department should implement the following policies and programs:

1. Provide information and training to building operators and facility managers on how to operate and maintain energy efficient technologies so that energy savings can continue to be realized.
2. Coordinate with other federal agencies to assure that these specifications are incorporated into other guidelines including GSA's Facilities Standards for the Public Buildings Service, and the Unified Facilities Criteria.
3. Assist in the development of model language for federal solicitations and contracts that reflect the requirements of Section 109.
4. Develop or identify existing training programs and other electronic educational tools for designers and contractors.
5. Coordinate with the Energy Star program to link Energy Star programs and incentives to the requirements of Section 109.

Additional Section 109 Provisions

The interim final rule notes that regulations on other provisions of Section 109 of the Act, including the requirements on sustainable design principles and water conservation technologies, are forthcoming. It is crucial that the Department move expeditiously to issue regulations on these other provisions.

Buildings are complex and require integration of numerous technologies and equipment. Changes in one aspect of a building's design affect other parts of the building. Only through an integrated and holistic approach to building design can sustainability and energy efficiency goals be maximized in a cost-effective manner. For example, altering the sighting of a building (i.e., rotating from east-facing to south-facing) will impact the ambient heat and daylighting levels, thus affecting the selection of HVAC systems and daylighting systems utilized by the architects and engineers.

Failing to issue timely guidance on the other provisions of Section 109 may result in the development and implementation of conflicting and incomplete sustainability strategies. With an integrated design approach that considers all factors related to sustainability, the greatest energy efficiency will be achieved.

ASHRAE members and staff look forward to continued work with DOE, other Federal agencies, and the American people in achieving energy efficiency. If you, or your staff, have any questions or would desire more information, please contact Ryan Colker, Government Affairs Representative at 202-833-1830 or rcolker@ashrae.org.

Respectfully submitted,



Terry E. Townsend, P.E.
President

TET/gfc

Comment Info: =====

General Comment: In keeping with the spirit and intent of the Interim Final Rule on the Energy Conservation Standards for New Federal Commercial and Multi-Family High-Rise Residential Buildings and New Federal Low-Rise Residential Buildings, the U.S. Postal Service intends to implement the requirements of this standard into the AS-503 Handbook, Standard Design Criteria. This handbook establishes the overall performance criteria for all Postal facility types and is our cornerstone guidance document for USPS building standards.

The U.S. Postal Service plan is to add text to the AS-503 Handbook, Standard Design Criteria that would emphasize the following:

? New designs must comply with the Department of Energy, Interim Final Rule, Energy Conservation Standards for New Federal Commercial and Multi-Family High-Rise Residential Buildings and New Federal Low-Rise Residential Buildings, dated December 4, 2006.

? When life-cycle cost-effective, new USPS facilities shall be designed to achieve energy savings 30 percent greater than that of the ANSI/ASHRAE/IESNA Standard 90.1-2004, or ICEE standard as applicable.

? When the 30 percent savings is not life-cycle cost-effective, alternative designs at lower energy savings will be evaluated to identify the next most energy efficient design. The alternative design evaluations will be reduced down from 30 percent by increments of 5 percent. The minimum value shall not preclude the design from remaining compliant with the applicable ANSI/ASHRAE/IESNA or ICEE standard.

LACLEDE GAS COMPANY
720 OLIVE STREET
ST. LOUIS, MISSOURI 63101
Area Code (314) 342-0714

Mark E. Krebs
Director, Market Planning

February 6th, 2007

Mr. Cyrus Nasser
U.S. Department of Energy
Building Technologies Program
Mailstop EE-2L
1000 Independence Avenue, SW.
Washington, DC 20585-0121

Re: Docket number EE-RM/STD-02-112
RIN Number 1904-AB13
Federal Register, Vol. 71, No. 232, Monday, December 4, 2006,
Energy Conservation Standards for New Federal Commercial and Multi-Family High
Rise Residential Buildings and New Federal Low-Rise Residential Buildings

Dear Cyrus:

Laclede Gas Company (Laclede) is the largest distributor of natural gas in Missouri, serving over 630,000 customers in St. Louis and surrounding counties of eastern Missouri. Many of these customers fall under the auspices of the Federal Energy Management Program (FEMP). Laclede is also an active member of the American Gas Association (AGA) and generally endorse their comments to you on February 2nd, 2007.

Laclede realizes the deadline for comments was February 2nd, 2007 and therefore, DOE does not need to consider further comments. However, we ask that DOE consider one additional comment that is vitally relevant to the American public but was not specifically addressed by AGA's comments. Specifically, the last paragraph in Section 4 33.5 (page 70282) states:

(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.

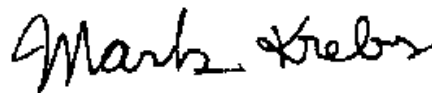
By making food service ventilation system requirements air-conditioning loads instead of process loads, Federal facilities' that have food service operations may respond by widespread fuel-switching from natural gas to electricity in order to help meet the 30% overall reduction of energy consumption in terms of Btu per square foot (Btu/ft²) enacted by the Energy Policy Act (EPA) of 2005. Laclede recognizes that this metric could effectively negate Executive Order (EO) 13123 and we realize that DOE must somehow reconcile this matter. For the following reasons, Laclede urges DOE to keep food service ventilation classified as process loads rather than ASHRAE-covered HVAC loads:

1. For existing facilities, fuel-switching would require expensive purchases of new cooking equipment that ultimately may not be economical from a taxpaying public perspective.
2. For either existing or new Federal facilities, “all-electric” cooking may increase the Federal government’s consumption of finite energy resources and may increase overall emissions thereof; whether such emissions are presently regulated or not.

Laclede prefers the term-of-art “full fuel-cycle analysis” rather than “real” energy efficiency or “site versus source.” This is because not all Btu’s are created equal (in terms of overall efficiency or associated emissions). Regardless of whether EO 13123 is vacated by the 2005 EPA Act, Laclede seeks a level playing field where more consideration is given to the public and environmental aftermath of energy policies.

AGA’s comments directed DOE to a whitepaper entitled “Public Policy and Real Energy Efficiency” at www.gasfoundation.org. If DOE needs any additional help gathering resources regarding this general subject, Laclede can and will quickly provide them.

Sincerely

A handwritten signature in black ink that reads "Mark Krebs". The signature is written in a cursive, slightly slanted style.



**Comments of NRDC on Department of Energy Interim Final Rule:
Energy Conservation for New Federal Commercial and
Multi-Family High-Rise Residential Buildings and
New Federal Low-Rise Residential Buildings**

Docket No. EE-RM/STD-02-112

David B. Goldstein, Ph.D.
Natural Resources Defense Council

30 January 2007

I. Introduction

DOE's proposed rules represent an outrageous misinterpretation of the Energy Policy Act of 2005, taking a legislative requirement to establish standards that save at least 30% and turning it into a do-it-yourself exercise for architects, an exercise structured to guarantee that savings will be no more than 30%. DOE should revise this rule as soon as possible to establish explicit standards that comply with the clear and evident requirements of EAct 2005, Section 109.

II. The Requirements of EAct

Section 109 of the Energy Policy Act of 2005 was intended to assure that federal buildings meet substantially higher standards for energy efficiency than typical new buildings. Subsection (1) of Section 109 immediately replaced the obsolete energy code references with references to current model energy codes. But it goes on directly in subsection (2) to require that:

“the Secretary shall establish, by rule, revised building federal energy efficiency performance standards that require that –

(i) if lifecycle cost effective for new federal buildings –

(I) the buildings be designed to achieve energy consumption levels that are *at least* 30% below the levels established in the version of the ASHRAE standard or International Energy Conservation Code as appropriate, that is in effect as of the date of the enactment of this paragraph;...”(emphasis added)

The plain reading of this Section, which is so obvious that it is almost an absurdity to try to paraphrase it here, is that the Secretary is required to establish new federal building energy performance standards that save at least 30% compared to the reference national codes. An exception is provided in the case that DOE determines that the 30% minimum for the energy goal is not cost effective.

In other words, DOE has an affirmative responsibility to write a standard – or adopt one by reference – that achieves the required savings (assuming it is cost-effective, which ample evidence demonstrates that it is) of at least 30%.

The Published Rule does not do this. Instead, it establishes the standard *at the same level* as the model energy codes, which is what Subsection I has already done legislatively.

DOE then tries to pawn off its responsibility on to the building designer by asking the designer to not only determine whether they can build a building that saves 30%, but to have the flexibility to go to a lower level of savings if the architect determines that the standard is not cost effective.

This procedure is in blunt and obvious contradiction to the requirements of the law. Congress did not ask DOE to set a standard based on individual, building-by-building calculations of cost-effectiveness. It did require DOE to establish “revised building energy efficiency performance standards that require that... the buildings be designed to achieve energy consumption levels that are at least 30% below the levels [in the model codes].”

DOE’s Interim Rule is also in error because it attempts to read the words “at least” out of the legislation. There is nothing in DOE’s Interim Rule that attempts to find standards for federal buildings that save even 30.1%. This is in plain violation of the intent of Congress.

DOE’s Interim Rule is all the more surprising because the amount of work that would be needed to establish cost-effective standards that meet the explicit language as well as the intent of the law is minimal. Most of the effort has been made in documents that are already available, and indeed, are cited in the Interim Rule. The New Buildings Institute’s Advanced Buildings™ Benchmark, as noted in the Interim Rule, was intended to achieve a 30% reduction compared to the previous version of ASHRAE 90.1, and with minor technical adjustments could easily be amended to meet the goal of at least 30% savings. The Benchmark itself points out demonstrations of cost-effectiveness in which the provisions for most buildings have a payback period of 3 years or less, which is outstandingly cost-effective using the methodologies DOE recommends in the Interim Rule. So it is evident that minor improvements beyond this could achieve cost effectiveness. Similarly, ASHRAE’s “Advanced Energy Design Guide,” applicable for small office buildings and retail stores, also approaches achievement of the 30% savings goal, and could have been used as an additional resource by DOE staff or contractors attempting to develop a standard.

Section 1331 of EPACt establishes a tax deduction for buildings that meet a target of 50% savings. Federal buildings can make use of this deduction to cut government costs by assigning it to the architect in charge of the design. Why did DOE not require all federal buildings to meet this target? Or if 50% is seen as too difficult, why not set a minimum of 45% or 40%?

For residential buildings, one approach that would have been compliant with the law would have been even easier for DOE. The Department already provides a methodology for calculating compliance with the new homes tax credits, also enacted in EPAct. This method requires 50% savings in heating and cooling energy compared to the model code referenced. It provides no prescriptive options for doing so. It would have been easy for DOE to require that federal buildings meet this 50% target using the methodology it has approved for tax credit compliance. If DOE suspected that this 50% level might fail the cost-effectiveness test, which NRDC finds dubious, since many builders are already taking advantage of the tax credit and would be profoundly unlikely to do so if it were not cost-effective for their customers, it could analyze whether the appropriate target would be 5% or 40% or 35% ...

What is so distressing about DOE's Interim Rule is that if Congress had intended each individual architect to check whether 30% savings were cost effective and if not, drop back to 25%, etc., as DOE has proposed, it could have written that itself. Evidently, the fact that Congress delegated the authority and responsibility to DOE to "establish, by Rule, revised building energy efficiency standards," meant that they intended something more sophisticated than what they could have done themselves.

Ironically, DOE's Interim rule validates Congress' decision in Subsection I to write the initial standards legislatively rather than through regulation; at least the result was what the legislation intended.

III. Conclusions

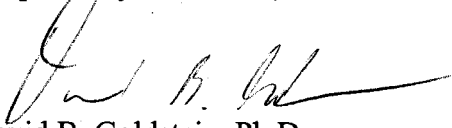
EPAct Section 109 requires DOE to promulgate new energy efficiency standards for federal buildings that save *at least* 30%. The Department has failed to do so. Instead, it has promulgated a procedure for each individual architect or building designer to follow in seeking energy savings that may be *as large as* 30%.

DOE has the affirmative obligation under Section 109 to do the serious analytical work that would establish actual federal building energy performance standards and to do so at a level that saves more than 30%. Given DOE's statutory requirement to "maximize energy conservation measures," DOE is obligated to set the percentage savings at the very highest level that is economically justifiable. This means that DOE must start its analysis at the 50% savings levels established for the tax incentives, both for commercial buildings and for residential buildings, and reduce stringency from this 50% savings only if 50% fails to be cost effective.

NRDC notes in conclusion the increasing tendency for Congress to adopt specifications that ought to be established through the regulatory system by DOE explicitly as part of legislation. This displays a profound distrust by Congress of DOE's competence at following the usual sort of legislative direction and relying on agency discretion and expertise to get it right. Unfortunately, this rule reinforces this skepticism. Regulating through legislation is not an example of good government. DOE should work, in this rule and others, to produce regulatory products that accomplish the intent of legislation and are compliant with the explicit requirements, instead of trying to rewrite the law.

Thank you for the opportunity to comment.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "David B. Goldstein", with a long horizontal flourish extending to the right.

David B. Goldstein, Ph.D.
Energy Program Director
dgoldstein@nrdc.org



**EDISON ELECTRIC
INSTITUTE**

January 24, 2007

Mr. Cyrus Nasser
U.S. Department of Energy
Federal Energy Management Program
Mailstop EE-2L
1000 Independence Avenue, N.W.
Washington, DC 20585-0121

RE: Energy Standard for New Federal Commercial and Multi-Family High-Rise Residential Building and Energy Standards for New Federal Low-Rise Residential Buildings Docket No. EE-RM/STD-02-112

Dear Mr. Nasser:

The Edison Electric Institute (EEI) appreciates the opportunity to submit these comments regarding the Department's Interim Final Rule on Energy Standard for New Federal Commercial and Multi-Family High-Rise Residential Building and Energy Standards for New Federal Low-Rise Residential Buildings, which were published at 71 Fed. Reg. 70275 (December 4, 2006). EEI is the association of the U.S. shareholder-owned electric companies, international affiliates and industry associates worldwide. Our U.S. members serve over 97 percent of all customers served by the shareholder-owned segment of the industry. They service 71% of all ultimate customers in the United States. Many of our members are combination electric/gas companies, and provide efficiency services for both fuel types.

EEI believes that energy efficiency has a very important role in our Nation's energy strategy. Our Board of Directors has approved a new EEI Energy Efficiency Initiative. We believe new technologies and controls provide important new tools to implement efficiency measures and achieve energy savings.

EEI has reviewed this interim final rule and supports it wholeheartedly. EEI would suggest that it made into a final rule as quickly as possible, to accelerate the energy savings that would result from this rule.

EEI believes that DOE has created a rule that will help agencies build new buildings that are more energy efficient in a technically feasible and economically justified manner. EEI also agrees with the approach that if 30% energy savings over recent codes are not technically feasible or economically justified, then agencies must evaluate the cost-effectiveness of alternative decrements below 30% (e.g., 25%, then 20%, etc). This type of approach will help agencies build more efficient buildings, while making sure that taxpayer money is well spent.

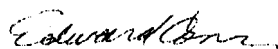
For federal low-rise residential buildings, DOE should consider allowing federal agencies to use ASHRAE 90.2-2004 code as an equivalent substitute to the *ICC International Energy Conservation Code, 2004 Supplement Edition* to determine the baseline building. In many cases, the ASHRAE 90.2-2004 code is more stringent (in terms of energy efficiency) than the IECC code. DOE may want to run simulation models to determine which code creates the more energy efficient baseline residential building, and use the more efficient code to create more national energy savings.

Conclusion

EEI believes that DOE has done a thorough and admirable job in meeting the provisions of Section 109 of the Energy Policy Act of 2005, and urges DOE consider the use of ASHRAE 90.1-2004 as a baseline code for low-rise residential buildings, if this action would not make DOE "re-notice" this rule.

EEI sincerely appreciates the opportunity to submit these comments.

Respectfully submitted,



Edward H. Comer
Vice President and General Counsel
Edison Electric Institute
701 Pennsylvania Avenue N.W.
Washington, D.C. 20004

cc: Rick Tempchin, EEI
Steven Rosenstock, EEI



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240



JAN 30 2007

Mr. Cyrus Nasseri
U.S. Department of Energy
Federal Energy Management Program Office
Mailstop EE-2L
1000 Independence Avenue, SW
Washington, DC 20585-0121

Dear Mr. Nasseri:

In accordance with the Interim Final Rule for Energy Conservation Standards for New Federal Commercial and Multi-Family High-Rise Residential Buildings and New Federal Low-Rise Residential Buildings, Docket No. EE-RM/STD-02-112, RIN 1904-AB13, published in the Federal Register on December 4, 2006 (Vol. 71, No. 232, pp 70275 – 70284), below is the Department of the Interior's comment:

Section 433.4, paragraph (a) (2) (b) and Section 433.5, paragraph (a) requires receptacle and process loads be excluded from design calculations that are used to show a 30 percent reduction in energy consumption of the proposed building from the baseline building. This requirement conflicts with ASHRAE 90.1, Section 11 and Appendix G, which requires receptacle and process loads be identically modeled for both the proposed building design and baseline building design. Also, U.S. Green Building Council LEED-NC Reference Guide Version 2.2 indicates that all energy costs including process energy must be included in the energy analysis. Recommend that 10 CFR 433 be consistent with the performance rating methodologies as outlined by ASHRAE and USGBC.

If you have any questions, please contact Mary Heying on (202) 208-4080.

Sincerely,

Debra E. Sonderman, Director
Office of Acquisition and Property Management

1. Clarification for the Section 433.4 Energy efficiency performance standard - Is Medical Equipment loads considered as process loads under subsection (b)?

Since the electrical and cooling loads for medical equipments can not be controlled, these loads for the medical equipment should be considered as a part of process loads referenced in the subsection (b).

VA's primary mission is to provide the best care and benefits for the nation's veterans. In spite of the ever-increasing energy demands that accompany providing the best healthcare in the nation, VA continues to be compared to other departments with office building-based portfolios using the same metrics. VA's energy performance measures must account for the 24x7, increasingly energy intensive nature of providing top-quality healthcare, and must not be compared against disparate property portfolios with completely different energy profiles.

2. Clarification for the Section II (page 70277) Discussion of Today's Action - Is it only for new Federal Buildings? How about the buildings with major renovation?

The second sentence of the Section II (Discussion of Today's Action) states that this rule deals solely with the energy efficiency of new Federal Buildings. Some of the VA Medical Centers will be completely renovated. For those completely renovated buildings, does this Energy Conservation Standard apply?

3. Clarification for the Section II (page 70278) Discussion of Today's Action – What stage of the design was reference?

“ All new Federal buildings for which **design** for construction has begun prior to that date must comply with the requirements in 10 CFR part 434 ...”

Some of the VA's new construction projects are at Concept Design stages, some are at development stage for design document, and some are at the Construction Document development stages. What is the design stage that this rule is referring to?