NMHC National Multi Housing Council®

National Apartment Association

**MEMORANDUM**

TO: Interested NMHC Members

FROM: Jim Arbury, Senior Vice President of Government Affairs

DATE: May 25, 2005 (Revised August 29, 2005)

RE: New Energy Efficiency Requirements for Air Conditioning Units

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In 2001, the U.S. Department of Energy (DOE) published a rule amending energy conservation standards for central air conditioners and heat pumps. The regulation, which takes effect on January 23, 2006, raises the minimum Seasonal Energy Efficiency Ratio (SEER) value for residential air conditioners and heat pumps by 30 percent, from 10 SEER to 13 SEER. The new standards are designed to: (1) reduce pollutant emissions and (2) postpone the need for new power plants by making HVAC equipment more energy efficient. Additional information on the rule is posted online at http://a257.g.akamaitech.net/7/257/2422/06jun20041800/edocket.access.gpo.gov/2004/pdf/04-18533.pdf.

As background, DOE announced the changes, pursuant to the 1987 National Appliance Energy Conservation Act, in 1992. In May 2002, the Bush Administration proposed reducing the target SEER to 12 from 13, spurring a lawsuit by the Natural Resources Defense Council and 10 states. In January 2004, the U.S. Court of Appeals for the Second Circuit restored the 13 SEER standard. The Administration and the air conditioning manufacturers chose not to appeal to the U.S. Supreme Court, and agreed to implement the SEER 13 regulation beginning in January 2006.

**The practical implication of this change for apartment owners/managers is that air conditioning equipment manufactured after January 23, 2006 must meet the SEER 13 rating. Importantly, properties with lower-rated air conditioning systems will not be required to upgrade to the more efficient SEER 13.** It is expected that replacement parts for less efficient equipment will be available for some time. However, when it is necessary to replace an air conditioning system, property owners will have to purchase the more efficient system. Most apartments currently use SEER 10 equipment, although some have already opted to install higher-rated, more efficient cooling equipment.

NMHC/NAA asked Harvey Sachs, Director of the Buildings Program at the American Council for an Energy-Efficient Economy (ACEEE) to explain how the new rule will affect apartment firms. ACEEE worked with DOE and industry to develop national appliance efficiency standards and has published various resources to help apartment firms identify cost-effective, energy-efficient building systems. His thoughts follow below, and additional information is available at www.aceee.orgbuildings/index.htm.

In addition, firms should be aware that many state agencies and private power companies offer incentive and assistance programs to help improve energy efficiency. They include: real-time energy pricing; rebates for energy-efficient appliances and HVAC systems; energy audits; and grants and low-interest financing for energy-efficient equipment. Firms should check with local utilities to see if they qualify for a tax incentive when they install energy-efficient HVAC equipment. A state-by-state summary of energy-efficiency programs is available at www.facilitiesnet.com/energyresearchcenter/energyincentives.asp.

## FREQUENTLY ASKED QUESTIONS ON 13 SEER REGULATIONS

1. **Do I have to replace my existing equipment to conform to the new 13 SEER regulations?**
   *Answer:* No, the standards only apply to new equipment, not equipment that has already been installed. You do not have to upgrade existing HVAC systems. In fact, you may still purchase replacement parts for the less-efficient systems. However, if you are in the process of constructing a new building or rehabilitating an existing property, you may want to opt for units that have the SEER 13 to avoid problems in the future if a unit needs to be repaired or replaced. Look for SEER 13 units that use 'next generation' coolants since the production of ozone-depleting refrigerants will be phased out by 2010. Air conditioners and heat pumps with SEER ratings higher than 13 are currently available and may be required to be installed in properties where owners are seeking certain green tax incentives.

2. **Will replacement parts be available for older 10 SEER units after January 2006?**
   *Answer:* Yes, for some years to come, depending on the business strategy of the manufacturer. A consultant for the Air-Conditioning and Refrigeration Institute (ARI) estimates that parts will be available to meet the repair needs of SEER 10 equipment for another 10 to 15 years (considered by the industry to be the lifespan of a system). After that inventory is exhausted, there will be no replacement parts, and property owners will have to replace their air conditioning systems with higher-efficiency equipment.

3. **If I have to replace a worn out 10 SEER unit and buy a 13 SEER replacement, will the increased size of the condenser (outdoor) unit fit in my space? What if it doesn't?**
   *Answer:* There are thousands of different sizes and shapes of central air conditioner models manufactured. Some condenser units are tall and thin, some short and wide, and some are in-between. Some SEER 13-rated units may be significantly bigger, while others may be only an inch or two larger in each dimension. The size of the individual component unit depends on the technologies that a manufacturer uses to achieve the required efficiency standard; SEER 13 units of all sizes are in production now and we expect that there will be products available for nearly all applications. Property owners will need to refer to individual manufacturers in order to find the model that best fits the physical constraints of their property. A directory of air conditioning systems is maintained by ARI and is available at www.ariprimenet.org. While this directory does not list sizes, it does provide information on the thermal performance of many systems.

4. **Will the new, larger units comply with building code requirements when they are located above the ground level in apartment buildings? Some owners are concerned that the weight (as opposed to the volume) of the units could force them to relocate the units.**
   *Answer:* The more efficient units will generally be a bit heavier than older units, although rarely will this extra weight be of such a magnitude that it will be an issue in most applications. If you suspect that this is an issue for your property, you should consult a professional engineer. For the rare building that cannot support increased loads, owners may be able to purchase units that meet the efficiency requirements through advanced compressors, controls or other improvements that do not add significantly to the unit's weight. These units may carry a price premium, though.

5. **Will the new evaporators (indoor coils) be compatible with older air handlers or, as a practical matter, will it no longer be possible to change out one of the components without replacing the entire system?**
   *Answer:* Many of the new evaporators will be somewhat larger than the old ones and may require an adapter to connect with the old air handler or furnace. If the outdoor unit (or its compressor) has failed, though, we strongly recommend replacing both the indoor (evaporator) and outdoor (condenser) air conditioner sections. Otherwise, efficiency will be greatly affected.

6. **Will gas furnaces need to be altered to work with the new equipment?**
   *Answer:* No. At most, an existing gas furnace may require an adapter to match the evaporator enclosure to the furnace and to the plenum. In exceptional cases, the HVAC contractor may recommend installing a different brand or series of units to meet space constraints or reduce the need for on-site sheet metal work.

7. **Will the new efficiency standards have the practical effect of requiring that both a condenser and evaporator be purchased because of incompatibilities between the old and new equipment?**
   *Answer:* There could be incompatibilities in some cases. For example, if the new unit uses an HFC refrigerant ("Puron" or other R-1410 refrigerant) instead of the current HCFC (R-22), then we believe most contractors will strongly recommend changing out both the evaporator and the condensing unit (and the refrigerant lines) because the lubricating oils are incompatible. There is also generally an efficiency advantage to replacing the indoor coil when the outdoor unit is replaced, as matched systems perform better than unmatched systems. It is unlikely to be *necessary* to replace the furnace or air handler, but doing so may save money in the long run if that unit is near the end of its service life. Additional information on various types of refrigerants is available at www.eere.energy.gov/consumerinfo/factsheets/bd6.html.

8. **Will the new larger evaporator coil units require a greater volume of air to be passed over them to achieve efficiencies? If so, how will this be accomplished?**
   *Answer:* In general, manufacturers want the air handler to deliver 350 to 400 cfm (cubic feet per minute) of air per ton of cooling (12,000 Btu/hr). This is not expected to change with the higher SEER ratings. However, there may be exceptions. Firms are advised to confirm these with their air conditioning contractor.

9. **Are the 13 SEER units that will be required in 2006 cost effective?**
   *Answer:* DOE conducted extensive cost analyses as part of developing the regulation. Nationally, they found that the new measures are cost-effective and will prevent pollution. Actual payback will depend on climate and air conditioner use. Also, past experience indicates that DOE tends to overestimate costs. If the costs are lower than originally estimated, the financial savings will be greater. Of course, these cost savings may pass directly to the apartment resident in the form of reduced energy bills, instead of directly to the owners. However, energy-efficient appliances can be marketed as a benefit of selecting a particular apartment community. Utility costs could well be a significant marketing point as energy prices continue to escalate.

10. **What refrigerants should property owners look for in terms of buying/replacing air conditioning equipment? How long can we expect inventories of older HCFC refrigerants to be available to service old systems?**
    *Answer:* Inventories of R-22, the HCFC used in residential air conditioners, are expected to remain adequate through the life of the equipment sold in this decade. However, it is banned for use in new equipment beginning in 2010, which will inevitably cause prices for it to gradually rise after that. Additional information on refrigerants and phase out dates is available at www.eere.energy.gov/consumerinfo/factsheets/bd6.html.

11. **Are there any resources available that would help a property owner evaluate the financials of upgrading their air conditioning system?**
    Answer: ACEEE recommends that owners start with the resources available on the ENERGY STAR website (www.energystar.gov) to help select products and obtain information on technical and financial aspects. For example, we have found that the air conditioners in many buildings are grossly oversized. Downsizing in such cases improves comfort and efficiency, and reduces the purchase price.