



October 27, 2004

Ms. Rachel Schmeltz
U.S. Environmental Protection Agency
Office of Air and Radiation
Washington, DC 20460

Re: Energy Star Proposals for Central Air Conditioners and Heat Pumps

These are the comments of Southern Company on the proposed 2006 Energy Star Standards for central air conditioners and heat pumps.

Southern Company (Southern) is the parent firm of five electric utilities in the southeastern United States: Alabama Power, Georgia Power, Gulf Power, Mississippi Power, and Savannah Electric. These electric utilities serve over 3.7 million customers, including 3.2 million residential and 479,000 commercial customers. Our 120,000 square mile service territory includes most of Georgia and Alabama, southeastern Mississippi, and the panhandle region of Florida.

Southern Company is an active participant in the Energy Star program, and appreciates the opportunity to comment on the proposals.

For Section I, Equipment Criteria, the proposed split system minimum SEER of 14 and EER of 12, and the single package equipment minimums of SEER 14 and EER 11, are reasonable proposals. Requiring a minimum EER helps prevent excessive demands on the electrical grid at peak conditions.

However, the proposed minimum HSPF for split systems is too high. An HSPF more comparable to SEER 14 would be an HSPF of 8.2, and we recommend this for the new Energy Star standard. Setting too high an efficiency requirement for heat pumps would encourage consumers desiring Energy Star equipment to choose a gas furnace and central air conditioning rather than an air-source heat pump. The Energy Star program has always been a fuel-neutral program, and setting a minimum HSPF of 8.5 would not be consistent with that policy.

The other requirements in section I appear to be reasonable measures, and will encourage the manufacture of equipment which is easy to maintain and which will retain their energy efficient characteristics better than if these measures were not followed.

Southern is not in favor of establishing installation criteria as found in Section 2. It is certainly our desire that equipment be installed in a proper manner such that energy savings can be achieved. However, the widely varying nature of building code enforcement, utility involvement, and other factors, across the numerous state and local

jurisdictions in the United States makes this very difficult. The discussion of the possible options for enforcement shows that EPA has a clear understanding of the complexity and difficulty of this task.


But regulating installation as well as equipment will require substantial additional resources on the part of EPA. Also, it is likely that in areas where building efficiency code enforcement is less strict, EPA will find it necessary to require third party certification of Energy Star installations in order to protect the integrity of the Energy Star program. This third party certification would inevitably add additional costs to the consumer that chooses Energy Star. Southern is deeply concerned that this additional cost will result in lower participation rates in the central air conditioner and heat pump Energy Star program, which could negate energy savings which might be achieved through better enforcement of installation practices. This is particularly relevant to Southern Company, because portions of our service area in the southeastern United States have less strict energy efficiency code enforcement than in some other sections of the country.

An additional area of great concern to Southern Company is **humidity control**. Mold, mildew, and related air quality issues are a severe problem in our area. We have little quantitative data, but a great deal of experience with high efficiency single speed central air conditioner and heat pump equipment which does not maintain proper humidity levels, and results in excessive relative humidity levels, which cause mold and mildew damage.

The ARI design temperature conditions do not address the real issue of humidity control. Almost any system will dehumidify at 95 degrees F – there is plenty of sensible load to require the operation of the equipment. The problem comes during moderate outdoor temperature conditions on humid days, such as when it is 75 degrees F and raining, especially for single speed units. The equipment is constantly cycling, and high efficiency units typically have higher temperature evaporator (indoor) unit surfaces due to larger, more efficient heat transfer surfaces. This results in less condensate production, but a larger volume of water left on the indoor coil to be reevaporated when the unit restarts. This moisture reevaporates and is sent back into conditioned space when the machine restarts, resulting in very poor actual dehumidification performance.

EPA should consider requiring either variable speed operation or active humidity control as a requirement of Energy Star. If not a requirement for all Energy Star equipment, perhaps some designation could be made of Energy Star units with good humidity control (a minimum of 30% latent capacity.) While there are areas of the country that this might not be necessary, there are substantial areas where it would be. And not all of these areas are in the South – a home located in a more northern location near a major body of water such as a lake is likely to have similar problems. Energy Star equipment is a premium-quality “brand” for HVAC equipment, and it is appropriate for premium equipment to do a superior job of latent cooling (dehumidification) as well as sensible cooling (temperature control.)

Thank you for the opportunity to comment on these Energy Star proposals.

A handwritten signature in black ink, reading "Donald M. Brundage". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Donald M. Brundage, P. E.

Codes and Standards Engineer

Southern Company Services, Inc.
