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**PROCTOR ENGINEERING GROUP**

March 24, 2005

Ms. Rachel Schmeltz  
U.S. Environmental Protection Agency  
1200 Pennsylvania Ave.,  
NW Washington, DC 20460  
Sent via Email: Schmeltz.rachel@epa.gov

Re: Energy Star™ specifications for residential air-source heat pumps and central air conditioners

Dear Ms. Schmeltz

Thank you for the opportunity to add our comments to the discussion of the 2006 Energy Star Residential ASHP and Central AC specifications.

The staff of Proctor Engineering Group have been involved with field testing and monitoring residential HVAC systems since the late 1970s. We have evaluated over 30 utility programs aimed at improving energy efficiency through higher efficiency equipment, technician training, contractor certification, installation quality, service quality, duct system integrity, etc. We individually train and support technicians across the US that provide proper installation and service which meet manufacturers' specifications.

Our initial comments on the draft specification and background issues follow in Underlined text.

**PARTNER COMMITMENTS**

**Note:** *For this specification, the term "Partner" may refer to any number of entities. However, to sign an ENERGY STAR Partnership Agreement for ASHPs and central air conditioners, the entity must have an EPA-approved program that includes a protocol for verifying that systems have been installed to meet manufacturer's specifications in terms of air flow and refrigerant charge and that the system has been sized according to Manual J® (or equivalent).*

We support the recommendation that a group of stakeholders work together to resolve issues of proper airflow and workable system sizing assurance methods.

With respect to airflow, the desired amount varies with the local climate (inside and outside).

With respect to system sizing, this item is of great importance to the utilities, states, and utility ratepayers that end up paying for the infrastructure and high spot electricity costs.

System size also plays a role in the dehumidification effectiveness of the unit. System sizing is not specified as a measure that needs verification, however because of its importance we should discuss methods of seeing that it is happening.

The time and cost for an effective verification of every unit are low. For a contractor who follows the manufacturer's specification on checking refrigerant charge and checking airflow, the additional time required is less than 5 minutes. There need be no paperwork and the total costs covering all administration etc. are less than \$150 per unit.

There are contractors that are concerned that it will take longer. Their fear is based on the reality that a verification system will hold them at the unit until it is working as designed. Which of course is the point.

*Programs may also include additional criteria and requirements such as NATE certification of technicians, duct sealing and repair, insulation and air sealing, continued technician training, and others.*

Splitting these off from the AC specifications is probably a good idea in spite of the fact there are really good things now listed as "additional criteria".

*In lieu of verifying each individual installed system, Partner may utilize an EPA-approved reporting and sampling protocol.*

Utilizing the installing technician's presence at the unit to provide data for immediate analysis and verification ON EVERY UNIT is both effective and cost effective. The key to success with these methods is what is done with the data reported.

*It is important to note that at no time will technicians be able to label an HVAC installation as ENERGY STAR without involvement of a Third Party. Instead, technicians should submit installation data to a Third Party running an installation verification program (i.e. an ENERGY STAR Partner) and that Third Party may award a certificate to the homeowner stating that the system as installed is ENERGY STAR qualified.*

The third party verification is essential to the effectiveness of the program. With self-certification, or data submission without analysis and oversight, the savings do not occur. For example, a recent program we evaluated for a major utility showed their program of contractor-supplied data was not successful; after "REPAIRS" 50% of the units had low airflow and 70% were mischarged.

Sincerely

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President

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