Appliance Standards Awareness Project
American Council for an Energy-Efficient Economy
Natural Resources Defense Council

June 9, 2011

Ms. Brenda Edwards
U.S. Department of Energy
Building Technologies Program
Mailstop EE-2J
1000 Independence Avenue, SW
Washington, DC 20585-0121

RE: Docket Number EERE-2009-BT-TP-0004: Supplemental Notice of Proposed Rulemaking: Test Procedures for Residential Central Air Conditioners and Heat Pumps

Dear Ms. Edwards:

This letter constitutes the comments of the Appliance Standards Awareness Project (ASAP), American Council for an Energy-Efficient Economy (ACEEE), and Natural Resources Defense Council (NRDC) in response to the Department of Energy (DOE) request for comments on the supplemental notice of proposed rulemaking (SNOPR) for test procedures for residential central air conditioners and heat pumps. 76 Fed. Reg. 18105 (April 1, 2011). We appreciate the opportunity to provide input to the Department.

Crankcase heater energy consumption can be significant and can vary substantially depending on the type of control strategy. In the preliminary technical support document (TSD), DOE noted that a typical crankcase heater can consume approximately 60 W, and with no temperature control will consume power continuously whenever a central air conditioner or heat pump is in the off mode.[1] Based on the national average heating season and shoulder season hours of 5,216 and 739, respectively, an unregulated 60 W crankcase heater on a central air conditioner would consume approximately 350 kWh annually, or about 15 percent of the annual electricity consumption of an air conditioner.[2] Conceptually, crankcase heater energy consumption could be significantly reduced through the use of control strategies that limit the amount of time the heater operates, perhaps combined with alternative technologies not currently in use. Therefore, intelligently capturing crankcase heater energy consumption as part of the test procedures could lead to standards that achieve significant national energy savings.

DOE should establish a repeatable off-mode test procedure that reasonably reflects crankcase heater energy consumption in the field while seeking to minimize testing burden. It is important that the test procedures capture off-mode energy consumption for the wide range of crankcase heaters and control strategies that are available, and those likely to be implemented to reduce this off-mode power consumption. It is also important that the test procedures are

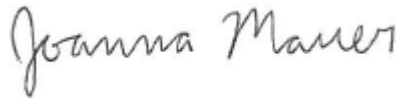
[1] Preliminary Technical Support Document. March 2010. p. 8-86, 8-87.
[2] *Ibid*. p. 7-34. Annual energy consumption of a market-baseline split-system coil-only unit is 2,291 kWh.

repeatable within a single lab and among different labs, including third-party labs. At the same time, DOE should minimize testing burden to the extent possible. We encourage DOE to consider the use of alternative rating methods as one mechanism for reducing testing burden. In addition, if the same crankcase heater system is used on many models of air conditioners or heat pumps of a particular compressor size, it may be sufficient to test the particular system only once and to apply the measured off-mode power consumption to the range of models that utilize the same system.

We encourage DOE to try to ensure that the test procedures encourage innovative designs that minimize off-mode energy consumption. The test procedures should attempt to not just capture differences in energy consumption among current crankcase heater designs but to also encourage innovative designs that could further reduce off-mode energy consumption. It seems possible that a crankcase heater design could consist of a high-powered heater that only turns on for a short time with a short delayed start of the compressor when there is a call for cooling, or a design where the heater does not operate if the temperature in the cabinet is below some threshold, a temperature that makes it almost inconceivable that there will be a call for cooling. While these are only examples of potential innovative designs, test procedures that could capture these and other innovative control strategies would provide an incentive to manufacturers to develop designs to further reduce off-mode energy consumption. We recognize that it will not be possible for DOE to anticipate every possible innovative design. In cases where the efficiency benefits of an innovative design cannot be captured by the test procedures, DOE's test procedure waiver process allows manufacturers to petition for a test procedure waiver for a particular basic model if its design prevents it from being tested according to the DOE test procedures or if testing with the DOE test procedures would not reflect its true energy consumption characteristics. 10 CFR § 430.27.

Thank you very much for considering these comments.

Sincerely,



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