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Air-Conditioning, Heating, and Refrigeration Institute

September 21, 2012

Ms. Abigail Daken
ENERGY STAR Water Heater Program Manager
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Abigail:

We have the following comments on the Draft 1 Version 1.0 ENERGY STAR Commercial Water Heater Specification presented in your August 28, 2012 letter.

Definitions

The definition of commercial gas storage water heaters should be modified to include those gas storage models that have input rates and storage volumes consistent with the parameters included in the definition of "Residential Water Heater" but which are designed to heat and store water at a thermostatically controlled temperature of 180F or higher. The final draft revised Energy Star Residential Water Heater Specification defines a residential gas storage water heater as a unit that is designed to heat and store water at a thermostatically controlled temperature of less than 180 F; has a nominal input of 75,000 Btu/h or less; and has a rated storage of not less than 20 gallons nor more than 100 gallons. Since those models which are designed to heat water to a controlled temperature of 180F or higher are not included in the Energy Star Residential Water Heater Specification, they should be included in the Commercial Water Heater Specification. We suggest adding the following as a new 1)A.a.ii:

> gas storage water heaters with an input of 75,000 Btu/h or less; a rated storage capacity of not less than 20 gallons nor more than 100 gallons and which are designed to heat and store water at a thermostatically controlled temperature of 180F or higher.

The definition of commercial heat pump water heater directly conflicts with the DOE definition of residential heat pump water heater which effectively covers models with input rates up to 6 kW. This is recognized in the scope of ASHRAE Standard 118.1, Method of Testing for Rating Commercial Gas, Electric and Oil Service Water Heating Equipment, which indicates that the standard covers heat pump water heaters with input rates of 6 kW or higher. The defining parameters should be input rate greater than 6 kW or current rating greater than 24 amperes.

Scope

It is technically possible to manufacture a gas storage water heater that meets the Energy Star specifications for both residential and commercial gas storage water heaters. The scope should be revised to not preclude this option if a manufacturer chooses to develop a model that satisfies the criteria of both Energy Star programs.

Commercial oil water heaters should not be excluded from this program. Although these water heaters may be a small percentage of the market, manufacturers should have a means to promote the more efficient models of commercial oil water heaters. Furthermore the Energy Star program should alert the users of these water heaters to those higher efficient models. In this particular case, an Energy Star program may also incentivize manufacturers to develop higher efficiency models.

As we commented during the September 12 webinar, there are several commercial water heater applications, such as in office buildings, where point of use (POU) water heaters are used today. Although your cover letter explained the decision not to include POU units in this draft specification, the wide range of commercial applications provide some clear situations where POU water heaters are an energy savings option. We encourage EPA to consider further ways in which such products could be included in the Energy Star commercial water heater specification.

Qualification Criteria

The minimum thermal efficiency (Et) specification of 94% for gas water heaters is unnecessarily stringent. The major benefit in energy savings for users of commercial gas water heaters occurs when condensing design models are used. Any condensing commercial gas water heater will save a significant amount of energy compared to a model with an Et of 80%. Although a model at 94% will save more, the bulk of the energy savings happens as soon as the leap to condensing is made; i.e. achieving an Et of 88% or higher. The fact that FEMP and CEE use a 94 % criterion is not sufficient justification. The purpose of the FEMP and CEE programs and the processes by which they determine their criteria are so different from the Energy Star program that EPA should not be selecting 94% as its criterion. The gas water heater criterion for the initial version of the ENERGY STAR Commercial Water Heater Specification should be one that recognizes the benefits of condensing technology rather than one that attempts to optimize the potential savings. We recommend that this criterion be lowered to 92%. That specification still provides significant savings to consumers while increasing the number of models available to them thus improving the likelihood a finding a model that meets the needs of the consumer's particular installation.

The federal minimum efficiency standards for commercial water heaters include a maximum standby loss requirement for gas instantaneous models that contain 10 or more gallons of water. Accordingly, the maximum standby loss criterion specified for storage models should also be specified for gas instantaneous models that contain 10 or more gallons of water.

The federal minimum efficiency standards for commercial water heaters also specify an alternative standby loss requirement for storage water heaters with volumes larger than 140 gallons that specifies a minimum level of insulation. This alternative recognizes the impracticability of conducting a standby

loss test on large commercial water heaters. Therefore the standby loss specification for gas storage models with volumes over 140 gallons should be either the maximum standby loss value specified or tank insulation with a minimum thermal resistance of R 12.5.

Effective Date

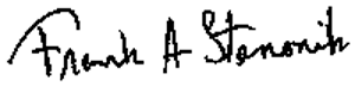
Federal regulation (42 USC Section 6294a.) requires that an appropriate lead time be provided prior to the applicable effective date for a new or a significant revision to an Energy Star specification. That section further specifies that the lead time shall be 270 days, unless the Agency specifies otherwise. Accordingly, we believe that EPA must provide some time between the finalization of the specification and its implementation. We further note that the statute clearly identifies 270 days as an appropriate lead time.

Other Comments

AHRI is developing an efficiency rating method for commercial heat pump water heaters based on the test methods of ASHRAE Standard 118.1. We will provide additional information on this standards development effort as a draft standard is finalized for general review.

We also appreciate the opportunity to comment on the Draft 1 Version 1.0 Commercial Water Heaters Specification. If you have any questions, please do not hesitate to call me.

Respectfully submitted,



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