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Sent: Friday, September 09, 2011 4:29 PM
To: Waterheaters@energystar.gov
Cc: Abigail Daken - EPA; Stern, Jim; Rajendra, Ajita; Dana, Paul; Parker, Mike; Warren, David; Grussing Bob; Wheeler, Kevin; Josh Greene; Nicole Nice; Neil Rolph; Adams, Charlie
Subject: A.O. Smith Corporation comments on ENERGY STAR® Version 2.0; Draft 1, for water heaters

The A.O. Smith Corporation has the following comments regarding the water heater eligibility criteria proposed in Version 2.0: Draft 1:

- Point-of-use Electric
  - The addition of the "envelope" specifications of 36"x25"x24" appears to open the POU category to small storage electric heaters, not just tankless electric heaters. Unfortunately, since the DOE test method to determine EF does not apply to heaters less than 20 gallon capacity, small storage heaters are still excluded from coverage. While we do not disagree with the concept of including electric tankless heaters under 12 kW in the program, we do not support actually including them UNLESS a method of test is adopted to allow small capacity storage heaters to also be included. Otherwise, the goal of technology neutrality is violated.
  - The inclusion of a low flow rate requirement is important, and we strongly support it. While there is not a currently included test method for flow rate, we believe that it should be relatively easy to establish one.
    - Perhaps it could be as simple as establishing the specified flow rate (similar to how it is currently done in the thermally efficiency test method for EPACT-covered water heaters?) and measuring the temperature of the water exiting the heater.
  - We support the addition of the "flicker" requirement to the electric tankless criteria, and agree that the proposed IEC test method is an appropriate method of test.
  - "Activation" should be defined. We suggest "Activation is when the water temperature exiting the water heater is at least 105F". "Activation time" may also be a useful term to define, and we suggest "The time (in seconds) between starting the flow of water and when the temperature of the water exiting the heater reaches at least 105F".

- Electric Storage
    - From a purely technical perspective, we do not disagree with the inclusion of add-on heat pump units to the category. However, after much discussion and consideration, we believe that the commercial issues raised by including these units in the program are insurmountable (at least while maintaining the neutrality, if not the integrity, of the ENERGY STAR brand).
    - As was discussed in length during the webinar on August 23, the warranty of the system which includes an add-on HP unit from one manufacturer and a storage heater from a different manufacturer is difficult, to the point of nearly impossible, to administer. We understand the opinions expressed during the webinar by the add-on HP manufacturers regarding the problems with them assuming the remaining warranty on the storage heaters upon which their units may be installed. We also continue taking our position that our storage heater warranty is voided by the installation of an add-on HP unit, for the reasons we have previously discussed (the additional load on our corrosion protection {anode} by the introduction of the HP heat exchanger material in our tank, for example). We have also discussed this issue with one of our major retail customers (who handles the warranty administration on the storage heaters which we manufacture for them), and they, too, are at a loss for a workable method of protecting the end user with a warranty that is fair and reasonable to both the add-on unit and the storage tank providers. We strongly believe that allowing the option of a warranty only on the add-on unit and a voided warranty on the storage heater is not something that is in the best interests of either the consumer or the ENERGY STAR brand, and considering that a total warranty requirement exists in all the other "integral" categories, is again a violation of the technology-neutral objective of the program.
    - The other major commercial issue that is raised by installing an add-on HP onto a storage heater is the problem with the safety certification of the storage heater. The factory wiring of a heater is obviously a part of the certified construction of the heater (by UL, or whomever), and the provisions of that certification clearly state that if any modifications are made to the construction of the heater, the safety certification is voided. Since all add-on HP units (of which we are aware) require modification of the wiring of the storage heater in order to tie the HP unit into the thermostat circuitry, such factory wiring modification constitutes a change to the certified construction, thus voiding of the certification.
    - We take the position that add-on heat pump units should, therefore, NOT be included in ENERGY STAR, as we do not believe the program should endorse putting a consumer in the situation where a product's safety certification is no longer valid, and where there is no practically administer-

able warranty available to that consumer (unless ALL warranty requirements are removed from the ENERGY STAR criteria).

- Gas Storage
  - We strongly believe that the appropriate warranty period for gas storage heaters is six (6) years.
  - The stated reason for choosing 8 years in order to ensure adequate time for payback on units does not make sense in light of having only a 6 year requirement on electric storage (HP) units. Again, technology neutrality would argue that 6 years is appropriate for both gas and electric storage heaters.
  - In addition, all of the eligible gas storage heaters now on the market are non-condensing units that fall into the 6 year requirement coverage of the 1.0 criteria. We do not see the rationale behind arbitrarily increasing the warranty requirement for these heaters (which will continue, we believe, to be the majority of ENERGY STAR eligible gas storage heaters placed into service), when they have already proven themselves in actual service. Further, as I mentioned during the webinar on the 23rd, we have considerable experience with (EPACT) residential condensing gas storage heaters in the "real world", and based on that experience, do not see the need to make the warranty criterion for condensing heaters any different than for non-condensing heaters.
- Gas Tankless
  - An editorial correction – the table in 3.B.b (line 144 of draft 1), under the "Safety" entry, references either ANSI Z21.10.1 or Z21.10.3, depending on burner size. This is incorrect, as all gas tankless (instantaneous) heaters, regardless of input rate, are covered in Z21.10.3. Volume 1 should not be referenced at all in this context.
- Solar
  - We believe that solar water heater systems should remain in the water heater ENERGY STAR program, and should convert to the SEF as the performance measurement instead of SF. Changing to SEF and leaving in the program will allow the consumer to judge all highly efficient water heating technologies against each other, and make an informed choice between all of his or her options. (Again, technology neutrality!)
  - The argument of excluding due to cost effectiveness is not effective, as other technologies which have similar economics are included (gas tankless heaters, for example, according to several sources, including Consumer Reports, have very long payback periods).
- General Comments
  - While it is clearly stated in draft 1 that higher input heaters (EPACT-covered) such as hybrids will not be included at this time, we continue to

support their inclusion in the program. Using the same criteria as the 25C Federal income tax credit would be an appropriate way to do so.

- We agree with the decision to retain the distinction between gas storage and gas tankless heaters.

Thank you for the opportunity to provide input into the ENERGY STAR criteria revision process. Please contact me if additional information or explanation is desired.

Regards,

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