From: John Confrey[SMTP:JCONFREY@NORITZ.COM]
Sent: Thursday, March 12, 2009 4:41:26 PM
To: ResWaterDirectPoolHtrs
Subject: Comments on Docket# EE-2006-STD-0129
Auto forwarded by a Rule

Hello,

I have attached my comments on preliminary TSD on energy conservation standards for residential water heaters, direct heating equipment, and pool heaters. I will also send a hard copy by mail to Ms. Brenda Edwards.

Thanks,

John Confrey
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3/10/09

Ms. Brenda Edwards-Jones
U.S. Department of Energy
Building Technologies Program, Mail stop EE-2J
ANOPR for Residential Water Heaters, Direct Heating Equipment, and Pool Heaters
EE-2006-STD-0129
1000 Independence Ave SW
Washington DC 20585-0121

RE: EE-2006-STD-0129
Noritz Comments on Preliminary TSD

Dear Ms. Edwards-Jones,

I would like to begin by congratulating those involved in the development of the initial TSD and the proposed rulemaking for residential water heaters, direct heating equipment and pool heaters. Quite a bit of research went into the TSD, and the vast majority of the information contained within is exactly correct. I would like to take this chance to submit comments on the subjects that the DOE requested comment on, as well on some other subjects that I feel require some change.

Noritz America Corporation is an avid proponent of efficiency improvement in gas burning appliances; we applaud the efforts of the DOE and the new administration to push for the adoption of higher efficiency technologies and products in the short term. That being said, I would like to comment on the following topics that are included in the preliminary TSD:

Cost Assumptions for Instantaneous Gas-Fired Water Heaters

The preliminary TSD assumes that the Manufacturer Production Cost for instantaneous gas-fired water heaters is a continuous curve essentially from and EF of 0.62 to an EF of 0.85. Above 0.85 the assumed curve kinks and jumps drastically up for a high cost at an EF of 0.92. I would argue that the curve is continuous from 0.62 to 0.82, at which point there is a kink in the curve, and the cost of production for product that is 0.83 or higher has a steep increase in cost.

Non-condensing instantaneous water heaters utilize copper as the heat exchanger material. Condensing products use stainless steel or higher grade materials for the heat exchanger. I have even heard of some manufacturers planning to use titanium as the heat exchanger material for their condensing products. It is this material change that causes the change in slope of the efficiency versus cost relationship.

The simplest rule for the delineation between condensing and non-condensing products is that 83% efficiency is the borderline. Therefore, manufacturers that are making products that have an EF of 0.83 or above would need to design these products to deal with condensation, requiring higher cost heat

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exchanger materials, condensate drains, and some method of treating the condensation so that it can be disposed of. Beyond manufacturer production costs, treatment and disposal of the acidic condensate would add further cost to the initial installation of the product.

8.8% Reduction in the Energy Factor of Instantaneous Water Heaters

The lifetime value calculation for instantaneous water heaters in the preliminary TSD uses an 8.8% reduction from the tested energy factor for the calculation of the cost of annual energy usage. There is very little evidence to support this claim, and I feel it is dangerous to jump to such a divergent conclusion based on little or no data.

This proposed correction is based on a single study of a single home. The home that was chosen to be the one source for data in this study was atypical; it was a small home with two working adults and no children. The test method for the energy factor for water heaters was designed for the typical usage of a standard American family including children, so it is no surprise that the choice of a drastically different household for this study resulted in some difference in the efficiency in use. To propose a correction for an entire class of products nationwide based on a single data point which does not represent the standard usage is neither logical nor scientific.

Since there is only one primary source for this correction, and all secondary sources for it either refer back to this original single source, or are based on laboratory conditions which are even less representative of actual usage of the product, I do not believe that such a drastic conclusion should be made based on such a lack of conclusive data. These products are sold worldwide, and in areas with widely varied efficiency test procedures the reported efficiency has little variance. It is not sound logic to conclude that the DOE test method is so far off, especially when differing test methods across the world are in general agreement.

Hot Water Use

The theory has been presented that users with instantaneous water heaters may consume more hot water than users with storage water heaters. I know of no data that would lend any credence to this theory. It is my experience that American consumers do not want to know where their hot water comes from; they just want it to be available when they need it. This being the case, consumers will not change their habits just because the source of their hot water has changed.

Service Requirements for Instantaneous Gas Water Heaters

In the life cycle cost calculation for instantaneous gas water heaters, a service cost was included which assumes every instantaneous water heater will have to be de-limed every year. This was based on clauses in the warranties of instantaneous gas water heaters that require hard water to be treated. Since this warranty clause is standard over all classes of water heaters, it should not be included in the lifetime cost of only gas instantaneous water heaters. Since the necessity of this requirement varies from place to place, it would be best not to include the cost for any class of water heater. However, if this cost is included in the lifetime cost of instantaneous water heaters, then a correction factor must be

added to account for the fact that this is not necessary for every installation, and a similar cost should be included for storage water heaters since their warranties require the tanks to be drained each year to remove lime and sediment.

It is true that most gas instantaneous water heater warranties have a clause requiring that water with very high levels of hardness needs to be dealt with in some fashion for the product to work properly. However, this is a standard clause in the warranties of all water heaters, including those of storage tanks. The warranties of storage tanks require that the tank be drained each year to rid the tank of the lime and other sediment that has built up. This must also result in an added service cost to these storage water heaters.

Much of the country has water that is soft enough that scale will never accumulate inside instantaneous water heaters. Others may only have intermediate levels of hardness which require treatment only every several years. The preliminary TSD assigns a de-liming cost to every instantaneous water heater that is installed, and repeats the cost for every year of operation. If this service cost is to be included, then it must be applied equally to all classes of water heater, and a correction factor needs to be added for gas instantaneous water heaters to represent the reduced incidence of actual de-liming requirements.

Use of Australia as Model for Adoption of Instantaneous Gas Water Heaters in the US

The preliminary TSD uses the adoption of gas instantaneous water heaters in Australia to model the future adoption in the US. Although there are clear differences in the two markets, Australia is the only market I have identified that could provide any insight for the adoption of the products in the US.

Trial Standard Levels

The DOE has asked for guidance on what the trial standard levels should be for the assessment of impacts and the selection of a proposed standard level. The most logical trial standard levels would be ones that do not vary between product classes, and which provide significant variation between classes. I would propose that trial standard levels based on energy factors of 0.60, 0.65, 0.70, 0.75 and 0.80 would be sufficient.

Cumulative Regulatory Burden

The most significant regulation that will have an impact on any proposed rule making has already been identified by the DOE, and that is the super low NOx regulations that will be put in place by the SCAQMD and others.

Current Economic Situation

The current US economic situation should also be taken into account in the TSD's assessment of the impact of a proposed rule making on manufacturers. As consumer spending is decreasing, profits will be impacted as will company's ability to support R&D costs both domestically and overseas. The weakness

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of the dollar will also affect not only overseas manufacturers, but also domestic companies that have production facilities in Mexico.

Thank you for the opportunity to submit comments for this proposed rule making. I would like to reiterate Noritz America's commitment to the reduction of energy waste in the form of inefficient gas appliances. I look forward to continuing to work with the DOE and the current administration to further the goal of increased energy efficiency in the appliance sector.

Sincerely,

John Confrey

John Confrey, PE
Vice President, Engineering and Service
Noritz America Corporation

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