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Serving the Vending, Coffee Service and Foodservice Management Industries

Memorandum

To: California Energy Commission

From: NAMA Energy Committee
Larry M. Eils, Senior Director Technical Services, NAMA

Date: August 9, 2004

Re: Docket No. 03-AAER-1
Glass-Front Bottled Beverage Vending Machines
Request for new energy consumption regulations

On behalf of the NAMA Energy Committee I want to thank you and members of the Commission for responding to the NAMA Memorandum of May 28, 2004 wherein we requested to work with the California Energy Commission in the development of an energy consumption level for glass-front beverage vending machines that would be acceptable to both the Commission and the industry. To support our request I am now presenting to the Commission supporting information of why the NAMA Energy Committee believes separate energy consumption levels are necessary for glass-front beverage vending machines.

The energy performance of a glass-front vendor is different than a closed door vendor for more reasons than just the glass door. Two important reasons for this difference are the products vended from glass-fronts and the cold dispersion used in a solid door vendor because of the stacked product. Let me explain further.

Currently the predominant solid door vendor is designed with stacked columns of cans lying on their long side. This type of storage technique provides for rapid cold dispersion because of the densely packed cans. In addition, the solid door vendor employs zone cooling. Here the cooling is forced on those cans that are about to be vended and not on those cans that are on top of the stack. With cold air concentrated on those cans on the bottom of the stack there is no need for extra energy to cool the cans at the top of the stack. However, when it comes to glass-front vendors you cannot focus your cooling on just a few products, you must cool everything in the machine since you do not know which product will be selected. Consequently you will use more energy since you are now cooling a larger area.

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Because glass-front vendors must cool every next-to-vend product position throughout the machine, an increased airflow throughout the cabinet is required requiring larger or additional evaporator fans. Also, many glass-front vendors use 1/2hp vs. 1/3hp compressors resulting in greater energy usage.

Glass-front vendors are also very unique for they have the ability to offer drinks in highly different packaging configurations. Stacked column vendors only dispense round cylindrical cans and very limited types of bottles. However, when you put bottles into a stacked column vendor you begin to get reliability problems concerning delivery of product. The consumer is now moving away from twelve ounce cans to drinks in other package sizes, shapes and materials. Glass-front vendors offer greater merchandising opportunities through larger selections of product in a greater variety of packaging and also bring about greater reliability in delivering these new products to our customers. As discussed earlier densely packed cans stacked on top of each other do require less energy to refrigerate but now that we have begun to dispense different type of packages in different shapes there needs to be more space around the packages so they can be reliably and individually dispensed from a machine. This means that the packages may not be in a densely stacked orientation and heat transfer will be slower. Also, the glass-front vendor has shelved product so the product contact and amount of product are both less than that of a stacked column vendor. So once again, more energy will be used for a glass-front vendor.

It also needs to be stated that solid door vendors have an insulated inner door panel to seal off the interior product cabinet. Since glass is not a very good insulator, glass-front vendors must rely on double or triple pane glass doors, sometimes with an inert gas between panes, to insulate the cabinet interior. With nothing separating the interior of cabinet from the glass more energy is required to cool the cabinet interior.

I would also like to point out that the ENERGY STAR specifications for can and bottled beverage vending machines do make a distinction between solid door and glass-front vendors by placing them in a special category which will eventually result in a specific energy efficiency specification within the next year.

Therefore, based on the above information we would like to propose an amendment to Appliance Efficiency Regulations (California Code of Regulations, Title 20, Sections 1601-1608, and Title 24, Part 6, Sections 110-111) to include a category for glass-front beverage vending machines. As I stated in our earlier communication to you the industry is more than willing to work with Commission staff to develop an energy consumption category for these types of machines. I look forward to hearing from you as to how we proceed to submit our data to you.