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Via E-Mail

Katharine Kaplan
U.S. Environmental Protection Agency
ENERGY STAR Appliance Program
appliances@energystar.gov

Re: ENERGY STAR Version 7.0 Clothes Washer Specification – Proposed Clarification to Voluntary Connected Criteria

Dear Ms. Kaplan:

On behalf of the Association of Home Appliance Manufacturers (AHAM), I would like to provide our comments on the ENERGY STAR Version 7.0 Clothes Washer Specification – Proposed Clarification to Voluntary Connected Criteria.

AHAM represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. In the U.S., AHAM members employ tens of thousands of people and produce more than 95% of the household appliances shipped for sale. The factory shipment value of these products is more than \$30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

AHAM supports the Environmental Protection Agency (EPA) and DOE in their efforts to provide incentives to manufacturers, retailers, and consumers for continual energy efficiency improvement, as long as product performance can be maintained for the consumer. Therefore, AHAM supports the new EPA proposal to simplify the methodology for the Temporary Appliance Load Reduction (TALR) with slight modifications that will ensure performance.

I. Clarifying Intent for Demand Response Capabilities

EPA proposed the modification to Section 4.G., shown below, in order to clarify the agency's intent that a clothes washer be able to respond to a signal to temporarily reduce load for all wash load cycles/settings. EPA sought feedback on the proposed modification.

From Section 4.G

A connected clothes washer shall have the capability to receive, interpret and act upon

consumer-authorized signals by automatically adjusting its operation depending on both the signal's contents and settings from consumers. At a minimum, the product shall be capable of providing the following capabilities for all cycle and setting combinations:

Although AHAM is in agreement that smart capability should generally include all cycles and setting combinations for household appliances, some cycles should be excluded. The sanitization cycle and the allergen reduction cycle should be excluded from EPA's proposed TALR response requirement because the response to a TALR signal may lead to the unit not achieving performance levels, which would have minimal impact to the grid because sanitization and allergen reduction cycles are not commonly used cycles. A similar exclusion was allowed for refrigerators and its defrost cycle in order to ensure responding to a TALR would not damage the unit or compromise performance.

Northwest Energy Efficiency Alliance (NEEA) recently conducted a study of laundry energy use over a month's time across 50 sites that demonstrate the frequency of use of the sanitization and allergen reduction cycles. The field study data recorded the wash cycle selected (regular, cotton, sanitation, delicate etc.) for 1,376 of the 1,503 total wash cycles recorded during the study at all the sites. The field data do not list the available cycle options for the participating units in the study, therefore determining an exact percentage for how often a certain cycle was selected is not possible; however, with the information available a range can be determined. The lower limit of the range assumes the sanitation option was available and could be selected for all 1376 wash cycles. The upper limit of the range assumes a sanitation option was only available for the units where a sanitization cycle had been recorded at least once.

Using the methodology described above, the range in percentage of time the sanitization cycle was selected when available is between 1.31% (based on the cycles recorded at all 50 sites) and 15.38% based on cycles recorded at four sites). The sanitization cycle was selected at least once at four of the 50 sites; therefore at least four of the 50 sites had a unit with a sanitization cycle as an option. Therefore, based on the NEEA data it is clear that the sanitization cycle is not a commonly used cycle.

An allergen reduction cycle was never selected according to the 1,376 recorded wash cycles selections.

The sanitization cycle and the allergen reduction cycle are certified using NSF protocol P172¹ and P351² respectively. NSF protocol P172 includes applying test microorganisms to fabric samples included in the test load and evaluates a machine's ability to reduce the levels of detectable bacteria by a minimum of three logs for each of the test organisms. NSF protocol P351 includes a water temperature evaluation test of which the test acceptance criteria states, "the machine must sustain a minimum water temperature of 55° Celsius for at least three minutes to demonstrate the ability to thermally kill dust mites." Interruption during either the sanitization cycle or the allergen reduction cycle will interfere with a machine's ability to meet required

¹ NSF Protocol P172 Sanitization Performance of Residential and Commercial, Family-Sized Clothes Washers

² NSF Protocol P351 Allergen Reduction Performance of Residential and Commercial, Family-Sized Clothes Washers

criteria. If interrupted, simply restarting a high temperature operation following the TALR response may cause undue damage to the wash items.

II. Defining Temporary Appliance Load Reduction

In an earlier draft, EPA had expressed the TALR capability as requiring at least a 50 percent reduction in power draw over the duration of the response, relative to a baseline power draw. EPA and DOE now proposes what they believe to be a simpler approach that requires a clothes washer to reduce its average power draw to no more than a specified, fixed level (in watts) during the load reduction period will offer greater test repeatability as well as reduce test burden. AHAM agrees using a fixed level instead of a percentage from a baseline is a simpler approach. We also agree that it will offer greater test repeatability while also reducing burden during product development and testing.

EPA proposed that the TALR capability require, at a minimum, the clothes washer to restrict its average power draw during the load reduction period to no more than 50 watts. The proposed 50 watt level was based in part on test data DOE collected. It is EPA's stated intent that at this level, a clothes washer would need to suspend most operations, but could likely continue to slowly rotate the drum, provide low-level agitation, and drain or fill the tub.

1. *Temporary Appliance Load Reduction Capability: The capability of the product to respond to a signal by providing load reduction for a short time period, typically 10 minutes. Upon receipt of signal and in accordance with consumer settings, except as permitted below, the product shall restrict its average power draw during the load reduction period to no more than 50 watts.*
 - a. *Default settings – The product shall ship with default settings that enable a response in accordance with 4G2 for a time period of least 10 minutes.*
 - b. *Consumer override – The consumer shall be able to override the product's Temporary Appliance Load Reduction response before or during a load reduction period.*
 - c. *The product shall be able to provide at least one Temporary Appliance Load Reduction response in a rolling 24-hour period.*

In response to the continuance of functions such as low level agitation, rotating the drum, drain/fill tub, AHAM is conducting its own data collection for the operations EPA described in order to determine if products will be able to continue these functions during the TALR response period. AHAM hopes to be able to provide test data on this issue very soon.

Best Regards,



Director, Energy & Environmental Policy