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March 31, 2013

Via E-Mail

Amanda Stevens
U.S. Environmental Protection Agency
ENERGY STAR Appliance Program
appliances@energystar.gov

Re: ENERGY STAR Program Requirements: Product Specification
for Residential Dishwashers, Eligibility Criteria, Draft 1, Version 6.0

Dear Ms. Stevens:

On behalf of the Association of Home Appliance Manufacturers (AHAM), I would like to provide our comments on the ENERGY STAR Product Specification for Residential Dishwashers, Eligibility Criteria, Draft 1, Version 6.0.

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 EPA and the Department of Energy (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. Accordingly, AHAM agrees that performance must be evaluated as more stringent energy and water criteria are set. Instead of providing data on cleaning performance to EPA, however, AHAM proposes that it voluntarily undertake such a data collection in order to provide data on performance during the next specification revision.

I. Definitions

We note that the definition of consumer product is not identical to the definition found in the Code of Federal Regulations. But EPA cites the CFR and indicates that, when in conflict, the definitions in the CFR take precedence. Accordingly, the definition in the specification will be overridden by the regulatory text should there be a discrepancy or question in the future.

We also note that the proper citation for the portable dishwasher definition is ANSI/AHAM DW-1-2010, not 2009.

II. Qualification Criteria

A. Energy and Water Performance Requirements

i. *Consumer Payback Analysis*

In the consumer payback analysis, EPA stated that “[f]or compact dishwashers, EPA was not able to estimate a payback since all of the models meeting the proposed levels are dishwasher drawers. These products are generally more expensive . . . and serve a different market than a countertop dishwashers [*sic*] making a like-to-like comparison not possible. In addition to higher efficiency and offering a different configuration, the built-in dish drawer products found offer a number of additional features not found in the product meeting the Federal standard, including an additional place-setting, additional wash cycles, adjustable racks and a delay start option. These additional features also contribute to the higher price.”

AHAM wonders if EPA’s inability to conduct a payback analysis for the reasons mentioned above indicate that the eligibility criteria EPA has selected cannot be achieved through one or more technologies such that qualifying products will be broadly available and offered by more than one manufacturer as required by the Guiding Principles. This is especially true given that EPA indicated that both dish drawer products it analyzed were made by the same manufacturer. We suggest that EPA speak with manufacturers of compact dishwashers in order to more fully understand whether the levels EPA proposed are achievable through more than one technology. EPA stated that it is seeking additional information on manufacturers’ plans to introduce more energy and water efficient compact dishwashers that exceed the current Federal standards. If manufacturers do not volunteer this information in comments, AHAM encourages EPA to actively seek it so that it can properly proceed with criteria based on data.

ii. *Technology Options*

EPA indicated that it reviewed the DOE Technical Support Document for residential dishwashers in order to further understand the technologies that could offer efficiency gains for both compact and standard-size dishwashers. EPA then indicated that it found that manufacturers could incorporate changes including a permanent magnet motor, an internal water heater in the base of the tub, a sump pump with reduced volume, and a switch mode power supply in order to meet higher efficiency levels. This is true for compact dishwashers based on AHAM’s review of the TSD. But, we note that the standard-size dishwasher analysis included

different technologies. The technology options should not be discussed as though they are the same. This may not have been EPA's intention, and, thus, we point it out only as a matter of clarity.

B. Connected Allowance

EPA has identified its intent to help advance the market for products with intelligent features in ways that deliver immediate consumer benefit as well as support a low-carbon electricity grid over the long-term. AHAM strongly supports EPA's decision to incorporate smart grid functionality and to provide a 5% allowance consistent with the "Joint Petition to ENERGY STAR to Adopt Joint Stakeholder Agreement as it Relates to Smart Appliances" from industry, efficiency advocates, and environmental groups. The allowance is intended to help jump start the market for dishwashers with smart grid functionality.

C. Reporting Requirement for Cleaning Performance

EPA proposed a reporting requirement for cleaning performance. EPA did not identify exactly how it plans to use, analyze, or share the data, but it did state that "[o]nce collected, this data will enable EPA to better understand how cleaning performance varies with energy and water use, providing the necessary information to more fully evaluate cleaning performance, energy and water use concurrently during future specification revisions." EPA proposed that, due to the variation in the ENERGY STAR test method for determining residential dishwasher cleaning performance, EPA would not post the individual-model cleaning performance scores on the ENERGY STAR qualified products list.

AHAM agrees that EPA should evaluate whether performance will be negatively impacted by any specification levels it proposes. It is important for performance to be maintained as efficiency requirements become more stringent. Although EPA has not proposed to do so in this draft, we note that EPA should not include performance metrics in future specifications. Manufacturers themselves have the most interest in ensuring that consumers receive superior performance, regardless of the energy and water efficiency of the product. It should not be the role of government, particularly in a voluntary program authorized to set energy efficiency criteria, to set performance requirements.

That said, if data is to be collected on cleaning performance, AHAM believes it is in the best position to collect and analyze that data from its members. In energy conservation rulemakings, AHAM often provides aggregated and de-identified data to DOE upon DOE's request. Never before have home appliance manufacturers provided data to the government on a rolling basis without a clear understanding of exactly how that data will be used, shared, and analyzed. AHAM members are not comfortable with such a data collection process and would prefer to provide the data to AHAM. We would not envision such a data collection to be a requirement in the ENERGY STAR specification, but rather a data collection which AHAM and its members would voluntarily undertake. Through this data collection, AHAM and its members would be in a position to provide relevant information to EPA on whether the next energy/water criteria EPA proposes for dishwashers will negatively impact performance. We would like to speak with EPA further about this possibility.

We also note that the utility of data collected using the existing ENERGY STAR test method for determining residential dishwasher cleaning performance will be questionable given the level of variation our round robin testing demonstrated. The scoring results, using the AHAM scoring method, from the round robin AHAM conducted showed a range of two standard deviations (99.5 to 71.4 for the soil sensing unit tested and 94.8 to 83.4 for the non-soil sensing unit tested). It will be difficult to accurately or confidently compare data across manufacturers given the concerns we have raised about reproducibility. It would be preferable for the test procedure to first be tightened before engaging in data collection of the scale EPA proposed. We understand that the timeline for improving the test procedure would likely be too long to allow for the collection of data in time for the next specification revision. Nevertheless, we believe that prior to data collection, test procedure revision to improve repeatability and reproducibility should at least be considered.

Finally, if EPA proceeds with a reporting requirement over AHAM's objection, we agree that the data should not be posted on the ENERGY STAR qualified products list. Given the inherent variation in the data, it would be confusing and potentially misleading to provide it to consumers.

III. Connected Criteria

A. Section 4.G

EPA proposed in Section 4.G that a connected dishwasher must have minimum capabilities to earn a 5% allowance toward the energy performance level required to meet the ENERGY STAR specification as follows:

A connected dishwasher system 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 in all operational modes:

There may be some cycle(s) and /or option(s) which are adversely affected by the Temporary Appliance Load Reduction Capability interruption and would require an exemption. For example, a NSF 184 certified "Sanitization" cycle requires an accrual of 3600 HUE (Heat Unit Equivalent) counts. Depending on specific dishwasher functionality, influenced by customer incoming water temperature, ambient temperature and supply voltage, interruption of HUE accrual could affect whether the 3600 HUE count is achieved.

AHAM requests the following sentence be added to the introductory paragraph.

Specific cycles and /or options, which are adversely affected by interruption, may be exempted from the Temporary Appliance Load Reduction Capability if they are described as exempt in the owner's manual.

In addition, dishwasher models /cycles with soil sensing capability may be adversely affected by Temporary Appliance Load Reduction Capability cycle interruption if the interruption occurs

during the sensing event and would require a postponement provision. Depending on specific dishwasher functionality, soil sensing may be determined by the rate of soil removal relative to a point in time. Soil sensing affected by interruption could result in increased water usage for an individual cycle, or multiple cycles if interruption takes place during sensing calibration.

AHAM requests the following sentence be added to the introductory paragraph.

Specific cycles with soil sensing capability, which are adversely affected by interruption, may allow postponement of the Temporary Appliance Load Reduction Capability interruption until after the soil sensing event.

B. Section 4.G.1.c

EPA proposed in Section 4.G.1.c a specified minimum capability for delay appliance load reduction in all operational modes as follows:

Delay Appliance Load Capability: The capability of the product to respond to a signal in accordance with consumer settings, except as permitted below, by delaying the start of an operating cycle beyond the delay period.

c. The product shall be able to provide a Delay Appliance Load response at the start of each consumer initiated operating cycle, but is not required to provide more than three Delay Appliance Load responses in a rolling 24-hour period.

AHAM agrees with the limit of three responses in a rolling 24-hour period, however, it should be clarified that this is one Delay Appliance Load response per cycle with a limit of three affected cycles per rolling 24-hour period. AHAM believes that if three delay responses are applied to a single cycle, each with four hour duration (as an example), that an aggregate 12 hour delay for a single cycle would not be acceptable to customers.

AHAM requests the following wording be added to c. after "24-hour period":

"... with no more than one Delay Appliance Load response per dishwasher cycle."

AHAM appreciates the opportunity to submit comments on the ENERGY STAR Product Specification for Residential Dishwashers, Eligibility Criteria, Draft 1, Version 6.0 and would be glad to further discuss these matters should you so request.

Best Regards,



Jennifer Cleary
Director, Regulatory Affairs