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June 9, 2016

Ms. Abigail Daken
U.S. Environmental Protection Agency
(LCHVAC@energystar.gov)

Re: AHRI Comments on Draft 1 Version 3.0 Product Specification for ENERGY STAR Qualified Light Commercial HVAC Equipment

Dear Ms. Daken:

These comments are submitted by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) in response to the Environmental Protection Agency (EPA) request for comments on Draft 1 Version 3.0 Product Specification for ENERGY STAR Qualified Light Commercial HVAC Equipment which was issued on May 12, 2016.

AHRI is the trade association representing manufacturers of heating, cooling, water heating, and commercial refrigeration equipment. More than 300 members strong, AHRI is an advocate for the industry and develops standards for and certifies the performance of many of the products manufactured by our members. In North America, the annual output of the HVACR industry is worth more than \$20 billion. In the United States alone, our members employ approximately 130,000 people and support some 800,000 dealers, contractors, and technicians.

We have the following comments on Draft 1 Version 3.0 Product Specification for ENERGY STAR Qualified Light Commercial HVAC Equipment:

1. EPA has proposed efficiency levels for light commercial air conditioners (AC), heat pumps (HP) and VRF multi-split systems that are generally higher than what is currently achievable. EPA has selected the minimum federal efficiency levels for AC and HP equipment that are scheduled to become effective in 2023; 7 years away. This is an option, however, these levels are too high at this time and manufacturers are not prepared for this jump in efficiency. Products compliance with the proposed levels account for only 4 to 11% of the AHRI Directory listings depending on type, and may account for lower percentages in sales.

For consistency, where possible it would be better to align the proposed levels with the newly released CEE Tiers. Alignment with CEE will ensure the ENERGY STAR

levels do not add a source of confusion for users and installers by adding an additional set of levels. More appropriate levels are proposed on the next page:

- a. AC: AHRI proposes alignment with CEE Tier 2.
- b. HP: Unfortunately, there is not an appropriate CEE Tier for these products; therefore, AHRI recommend the following levels:

Size Category	Heating Type	ENERGY STAR Ver 3, Draft 1 Proposal	AHRI Recommendation
65,000-135,000 BTU	Electric Resistance (or None)	11.8 EER 14.1 IEER 3.4 COP*	11.8 EER 12.8 IEER 3.4 COP*
	All other (gas)	11.6 EER 13.9 IEER 3.4 COP*	11.6 EER 12.6 IEER 3.4 COP*
135,000-240,000 BTU	Electric Resistance (or None)	10.9 EER 13.5 IEER 3.3 COP*	10.9 EER 12.0 IEER 3.3 COP*
	All other (gas)	10.7 EER 13.3 IEER 3.3 COP*	10.7 EER 11.8 IEER 3.3 COP*

- c. VRF: AHRI does not have a recommendation for VRF levels at this time. However, the proposed levels far exceed CEE Tier 1, and are comparable to the most efficient levels for similar products less than 65,000 BTU. We would recommend that the increase in the proposed levels for VRF products be more proportional to the increase for AC and HP. A DOE rulemaking to revise efficiency level is expected to be initiated this year. It may be necessary for EPA to revise the ENERGY STAR levels based on the outcome of the upcoming DOE rulemaking.
2. The ENERGY STAR multiple sample approach as described in [Directive No. 2011-04](#), published 5/09/2011, was specifically developed for residential products. This approach is not appropriate for commercial equipment as it is not reasonable to retain three additional samples because these products are expensive and are not mass produced. The single sample approach could be utilized to avoid retaining samples; however, this option offers no testing tolerance, which is unreasonable. Ratings are determined by a population of tested samples, so it is statistically impossible to ensure a single test will pass. Underrating commercial equipment could cause a commercial building to be designed with oversized equipment, which could waste energy if the equipment may not operating at the optimal condition. EPA should consider an

additional approach for commercial products where a 5% testing tolerance is provided without retaining three samples. The cost of ENERGY STAR Certification may not be justified at this time for the commercial market, particularly due to the additional cost of retaining multiple samples.

AHRI appreciates the opportunity to provide these comments. If you have any questions regarding this submission or would like to discuss any of these points further, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Helen Davis', written in a cursive style.

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