

***Appliance Standards Awareness Project  
Northwest Energy Efficiency Alliance***

July 5, 2016

Ms. Brenda Edwards  
U.S. Department of Energy  
Building Technologies Program  
Mailstop EE-5B  
1000 Independence Ave, SW  
Washington, DC 20585-0121

Docket Number: EERE-2014-BT-TP-0054

RIN: 1904-AD43

Dear Ms. Edwards:

This letter comprises the comments of the signatories in response to the Department of Energy's Notice of Proposed Rulemaking on Test Procedures for Commercial and Industrial Air and Gas Compressors published May 5, 2016.

## Summary

The signatories generally support DOE's proposed test procedures for compressors. However, we have a few comments and recommendations for improving the proposed test procedure as follows.

## Scope

The signatories recommend that DOE expand the scope of the test procedure and make it applicable to air compressors driven by all kinds of electric motors, not just brushless electric motors as currently proposed. We plan to submit comments on DOE's proposed air compressor energy efficiency standards supporting an expansion of the standard's scope of to cover air compressors driven by all types of electric motors. We believe that the proposed compressors test procedure should apply to at least as broad a range of equipment as may be covered by eventual compressors energy efficiency standards.

Even if DOE does not expand the scope of the proposed energy efficiency standards for air compressors, expanding the scope of the compressors test procedure to cover more types of compressor drivers would allow the consistent collection of a wider range of compressor performance data which may be used to support efficiency programs and in the analysis of future standards.

### Support ISO 1217:2009 with Modifications

The signatories support DOE's use of ISO 1217:2009 as the basis for the compressors test procedure, with certain modifications and additions. We support DOE's proposed use of variable loading test points at 40%, 70% and 100% of full load for part load testing of variable speed compressors. Using these test points would provide alignment with EU test procedures, and facilitate the comparison of energy efficiency between different variable speed compressors.

### Part Load Testing of Certain Fixed Speed Compressors

We also recommend that DOE review the proposed test procedure requirements for fixed speed compressors to take into account the fact that this equipment is sometimes sold with controls that allow variable air flow. Fixed speed compressors sold with variable air flow controls are able to provide the utility of variable speed compressors and should be tested in a comparable fashion, i.e. at 40%, 70% and 100% of full load.

Requiring fixed speed compressors sold with variable air flow controls to be tested at the same part load test points as variable speed compressors would further facilitate the comparison of part load energy efficiency between fixed-speed and variable-speed compressors, and allow designers to select the most efficient compressor for a given application.

### Power Factor

The signatories support DOE's proposed requirement that electrical measurement equipment used in the compressors test procedure be "capable of measuring true RMS current, true RMS voltage, and real power up to at least the 40th harmonic of fundamental supply source frequency and have an accuracy level of  $\pm 2.0$  percent of the measured value when measured at the fundamental supply source frequency".

We appreciate the opportunity to provide these comments and look forward to the final rule.

Sincerely,



Chris Granda  
Senior Researcher/Advocate  
Appliance Standards Assistance Project (ASAP)



Louis Starr, P.E.  
Energy Codes and Standards Engineer  
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