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MEMORANDUM

To: DOE Office of General Counsel

From: Tony Bacon

Date: June 15, 2016

Re: Ex Parte Communication Memo

This memo provides a summary of the communications made to the DOE staff regarding proposed rules on ceiling fan test procedures. The communications occurred during a teleconference on June 7, 2016.

The meeting attendees included:

Lucy Debutts (DOE)
Ashley Armstrong (DOE)
Bill Walker (Hunter Fan Company)
Tony Bacon (Hunter Fan Company)
Phil Daniels (Degree Controls, the company which supplies sensors to both the Hunter and Intertek ceiling fan test labs)

Summary of Issues Discussed

Correlation and Repeatability Issues with the Proposed Ceiling Fan Test Procedure

Hunter expressed concern with the substantial inter-laboratory correlation issues and intra-laboratory repeatability issues that were outlined in the April 14, 2016, American Lighting Association supplemental comments. Measurements at low speed tend to be the most problematic. Hunter pointed out that it has been actively working with Intertek with trying to solve both the correlation and repeatability issues.

The DOE indicated that they were aware of the issues and were actively working on resolving the issues as well.

Potential Improvements to Ceiling Fan Testing

Hunter shared a recent Energy Star experience where Hunter and Intertek learned that the direction of the air flow sensor arm can make a substantial difference with the test results. Specifically, the results will vary between pointing the sensor arm to the corner of the test lab versus the middle of the test lab

wall. Phil Daniels, a sensor expert from the company who supplies sensors to both Hunter and Intertek, confirmed that pointing the sensor arm towards the middle of the wall provides the best perpendicularity for the sensors.

The following other potential improvements were briefly discussed:

(1) Calibration. The sensors should be mounted in the same way that they were calibrated.
(2) Omnidirectional Sensors. The current sensors utilized by both Hunter and Intertek are not omnidirectional. Omnidirectional sensors would more accurately represent the airflow felt by consumers.
(3) Humidity Control. Although by itself humidity doesn't affect the results substantially, it does contribute to the overall error rate if the humidity is varied between tests or test labs.
(4) Barometric Pressure. Similar to Humidity, for best results, it should be compensated for.

The following items were not discussed but should be considered.

(5) Visualized Flow. Utilize a fogger product to visualize flow and to confirm airflow is into the sensor orifice.
(6) Low Flow Sensors. DegreeC has new improved low flow calibration methods implemented on its UAS1000 series of velocity sensors. DegreeC recommends those for ceiling fan testing. The F900 is an older architecture and has not had algorithmic improvements since 2009.