



Mitsubishi Electric & Electronics USA, Inc.  
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October 7, 2010

Via Email

U.S. Department of Energy

Email: [expartecommunications@hq.doe.gov](mailto:expartecommunications@hq.doe.gov)

RE: Ex Parte Communication

On October 5, 2010, Paul Doppel and Pete Salavantis of Mitsubishi Electric & Electronics USA, Inc. ("MEUS") met with Department of Energy ("DOE") officials, Laura Barhydt, Ashley Armstrong and Celia Sher.

At the meeting, MEUS provided an overview of Variable Refrigerant Flow (VRF) HVAC systems and information regarding the development of testing standards and certification requirements included in the Air-conditioning, Heating and Refrigeration Institute (AHRI) Standard 1230 and American Society of Heating, Refrigeration, and Air-conditioning Engineers (ASHRAE) Standard 90.1-2010.

The discussion centered around the complexities of the VRF systems and the challenges with testing such systems due to the extremely large number of outdoor unit and indoor unit combinations. Because the outdoor unit is the primary efficiency driver, several years ago DOE and AHRI developed an appropriate definition of "tested combination" to provide representative combinations of the ducted indoor units and the highest sales volume family of non-ducted indoor units. This definition is used to define the systems for testing purposes and to determine the capacities and efficiencies of each VRF outdoor unit.

Additional discussion topics included the energy savings aspects of VRF systems, the definition of a basic model group at AHRI for VRF systems, and the impact of single module and combined module outdoor units on the quantity of tests required to meet an acceptable level for a certification program.

Sincerely,

A handwritten signature in black ink that reads "Paul Doppel". The signature is written in a cursive, flowing style.

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