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VIA EMAIL

May 12, 2020

John Cymbalsky
U.S. Department of Energy
Building Technologies Office
Test Procedure Waiver
1000 Independence Avenue SW
Mailstop EE-5B
Washington, DC 20585-0121

Re: Petition of Hussmann Corporation for Waiver of Test Procedure for Commercial Refrigeration Equipment

Dear Mr. Cymbalsky:

Hussmann Corporation submits this Petition for Waiver and Application for Interim Waiver from DOE's test procedure for commercial refrigeration equipment (per Title 10 Chapter II Subpart V – General Provisions 431.401). Hussmann is submitting this request because the current test procedure to evaluate the energy conservation rating for certain basic models (Appendix 1) is unrepresentative of the true energy consumption characteristics.

Basic Models for Which a Waiver is Requested
The Basic Models for which a waiver and interim waiver are being requested are set forth in Appendix I (hereinafter referred to as "Smart Exchange Locker"). The Smart Exchange Locker consists of a self-contained refrigerated unit with modular door compartments and its use is intended for the short-term storage of temperature-controlled products as part of an e-commence fulfillment solution. A picture of the Smart Locker is also included in Appendix I.

Design Characteristics Constituting the Grounds for Petition
The Smart Exchange Locker consists of temperature-controlled units. These units can control both ambient temperature (non-critical food temperature) as well as medium and low temperatures (critical food temperature). Each unit is dedicated to one temperature setting with multiple compartments. End-user (retail) personnel load product into the compartments based upon the product temperature requirements. A notification system informs the end-user's customer (consumer) that the order is ready for pickup. Upon arrival at the Smart Exchange Locker, the consumer will use a code or personal mobile device to unlock the compartment(s) containing the consumer's products, thereby satisfying an order. The consumer retrieves the

products and leaves. Finally, the Smart Exchange Locker compartments close and are available for the retail personnel to load subsequent orders. The Smart Exchange Locker is designed to be used in various locations including the lobbies of condominium / apartment complexes, corporate campuses, and college campuses / dorm facilities.

The compartments are designed for loading and retrieving product limited times per day. They are not designed or used as a traditional merchandiser where stored product may be exposed to constant door openings throughout a day.

Specific Requirements Sought to Be Waived

The current DOE test procedure sought to be waived can be found at 10 CFR Appendix B to Subpart C of Part 431 - Amended Uniform Test Method for the Measurement of Energy Consumption of Commercial Refrigerators, Freezers, and Refrigerator-Freezers, per AHRI Standard 1200 (I-P)-2010, section 6, "Rating Requirements for Self-contained Commercial Refrigerated Display Merchandisers and Storage Cabinets."

Such procedure requires the basic models to be tested per ANSI/ASHRAE Standard 72. In ANSI/ASHRAE 72 - 2005, section 7.2 the door opening requirements are as follows:

> **Current Door Opening Requirements**
> Each door shall be in the fully open position for six seconds, six times per hour for eight consecutive hours. Each door shall be opened sequentially, one at a time. The eight-hour period of door opening shall begin three hours after the start of a defrost period. For units with pass-through doors, only the doors on one side of the unit shall be opened during the test.

The Need for the Requested Waiver

The required number of door openings in the current procedure do not anticipate the usage profile and application of the Smart Exchange Locker and thus overstate the energy consumption. In other words, the current test procedure overestimates the necessary door openings because ASHRAE-72 -2005 is intended for traditional refrigerated merchandisers and the consumer behavior at a grocery store or convenience store. The Smart Exchange Locker is designed for short-term storage of food and non-food items that may or may not require temperature control. The usage profile of the Smart Exchange Locker is limited by the time delay from the consumer schedule and retail delivery of product and the consumer arrival to collect their order. From beta testing we conclude that the test procedure previously requested by ITW (see next paragraph) is an accurate representation how a Smart Exchange Locker is being used in the field.

Hussmann is petitioning for a waiver on the door opening process for the low temperature Smart Exchange Locker module to be identical to the Decision and Order Granting a Waiver to ITW Food Equipment Group, LLC From the Department of Energy Commercial Refrigeration Equipment Test Procedure, in Federal Register/ Vol. 83, No. 77 / Wednesday, September 12, 2018 / Notices pages 46148- 46152, as set forth further below.

Proposed Alternate Test Procedure

> **ITW Door-Opening Requirement:** Door openings shall start 3 hours after concluding stabilization period. Open each door for 8 seconds, every 2 hours, for 10 consecutive hours. (6 door cycles) (3 "load" and "unload" cycles) > Stock (load)+ Retrieve (un-load) ~ Cycle (turn).

Comparison of Standard to Waiver Method

Figure 1 shows the comparison of energy performance for a Smart Exchange Locker Low Temperature Module, Model SLOL8. The allowable energy level is 10.22 KW-hr/day (DOE equipment class VCS.SC.L). The proposed alternate test procedure, based on how the locker is used in the field, shows it will meet the maximum allowable energy limits without further need to modify additional energy requirements. This also shows how the energy consumption will be more accurately represented.

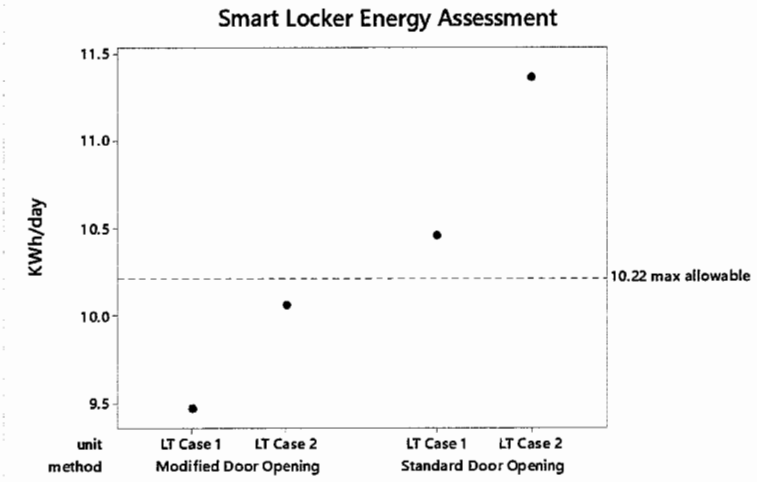

Figure 1: Energy Comparison Smart Locker Assessment Methods

List of Manufacturers of all Other Basic Models Marketed in the United States and Known to the Petitioner to Incorporate Similar Design Characteristics

Hussmann has reviewed the CCMS database as of May 8, 2020 to review all known listed products and found that there are no known listed models covered by the DOE requirements that have design characteristics similar to that on which our petition is based.

Hussmann has done web searches and inquired with customers and is not aware of any products similarly designed having been sold in the United States. Hussmann is aware that products similar to the Smart Exchange Locker exists outside of the United States and believes that domestic retailers have been reviewing such products. Hussmann has not found any data indicating such products meet DOE energy efficiency requirements, UL electrical and mechanical safety requirements, or NSF food sanitation and food product safety temperature requirements.

Therefore, Hussmann does not believe that there are other known manufacturers in which to provide concurrent notice of this Petition for Waiver and Application for Interim Waiver.

Request for Interim Waiver

Hussmann Corporation also petitions for an interim waiver for the models listed in Appendix I, based on the merits of our proposed alternate test procedure to represent actual consumer behavior. With this waiver and reliance on alternate test procedure, Hussmann's calculations of the Smart Exchange Locker will accurately represent energy consumption and therefore believes the petition for waiver is likely to be granted. It is therefore essential the interim waiver be granted to allow Hussmann Corporation to distribute the Smart Exchange Locker and meet current demands.

Economic Hardships and Competitive Disadvantages

Changes in consumer behavior over the last several years show that traditional brick and mortar groceries are facing more competition from online shopping opportunities. The need for the Smart Exchange Locker is an option that traditional groceries as well as "new players" in the fresh food concept are using to expand their product offerings and appeal to the newer consumer behavior. Hussmann has been working with the retailers to understand their needs moving forward. The Smart Exchange Locker is an opportunity for both current and future shopping. We understand similar products are available overseas – they do not meet the stringent electrical and mechanical safety needs, food preservation safety needs, and energy efficiency needs required in the United States. These products are being evaluated by retailers in the US and there is a strong possibility these products will find their way into the US market. The above mentioned safety and energy efficiency needs may not be met because, like many newer concept products, the appropriate standards and regulations will not be apparent to local authorities having jurisdiction (AHJs).

Refrigerated lockers are critical to support the needs of the growing e-commerce market. Online grocery sales are projected to grow at a compound annual growth rate of 15% (prior to the COVID crisis) through 2022, reaching 8.2% of total grocery spending. In addition, buy online pickup in store (BOPIS) and curbside pickup increased 62% between Feb. 24 and March 21 compared to the same period in 2019. Lockers are becoming viewed as a preferred method of supporting curbside or BOPIS grocery sales to limit contact. Shoppers prefer the "no human contact" that they get from ordering online and picking up their purchases at a locker. Home grocery delivery companies are seeing demand increase dramatically and expect e-commerce adoption to continue. They expect many customers not to return to traditional shopping after this change. In addition, one of the leading home grocery delivery companies projected a demand for 1000 lockers annually (prior to the increased demand created by COVID-19). We strongly expect this entire market to see an increased demand based on the changing consumer shopping behavior accelerated by the recent concerns of the COVID crisis.

Conclusion:

The Smart Exchange Locker is designed for limited access short-term storage of products to facilitate consumer pickup of electronically purchased items and it is not a traditional refrigerator or freezer merchandiser. Hussmann Corporation petitions DOE to grant the use of an Alternate Test Procedure and an Interim Waiver from DOE's current requirement to test Commercial Refrigerators, Freezers, and Refrigerator-Freezers for the Smart Exchange Locker. Without such requested relief, Hussmann Corporation will not be able to meet market demand for a product supporting critical temperature short-term storage of e-commerce products. A grant of this petition is required to align a test procedure with the actual product usage profiles thereby allowing compliance with the requisite energy standards.

Sincerely,

Daniel C. Conrad, Ph.D.
Director Reliability & Testing

APPENDIX I- Smart Locker

Basic Models for Which a Waiver is Requested

A waiver is requested for the Hussmann branded Smart Locker basic model(s) which will be distributed in commerce. These models are identified as:

Branded	Model Numbers:
Hussmann	SLOL6 SLOL8 SLOL10 SLIL6 SLIL8 SLIL10

Picture: Smart Locker