Continental Refrigerator

December 11, 2023 [redacted]

Jeremy Dommu
U.S. Department of Energy
Office of Energy Efficiency and Renewable Energy
Building Technologies Office, EE-5B
1000 Independence Avenue SW
Washington, D.C. 20585

Re: **NON-CONFIDENTIAL** Response to DOE NOPR - Energy Conservation Standards for Commercial Refrigerators and Freezers *[Docket No: EERE-2017-BT-STD-0007]*

Submitted via email to: CRE2017STD0007@ee.doe.gov

Dear Mr. Dommu:

[redacted]

Continental Refrigerator ("Continental"), a division of National Refrigeration and Air Conditioning Products, Inc. ("NRAC") is a small domestic manufacturer of commercial refrigerators and freezers. We design, build, and certify our products to meet all regulatory requirements, while providing superior performance needed to maintain safe food temperatures in the harsh and abusive high-ambient temperature environments of commercial kitchens. The U.S. Department of Energy ("DOE" or "the Department") Energy Conservation Standards ("ECS") for Commercial Refrigeration Equipment ("CRE") have a momentous impact on our company.

Commercial refrigeration equipment must comply with numerous regulations for safety and sanitation, as well as DOE energy efficiency. The refrigerants and foam insulation that are critical components of these products must comply with Environmental Protection Agency (EPA) Global Warming Potential (GWP) limits for the phase-down of hydrofluorocarbons (HFCs). As a small manufacturer in a heavily regulated industry, Continental is particularly challenged by the continual changes in regulations, while working to control rising costs and develop innovative products in a highly competitive market.

Despite significant resource limitations, Continental is an active members of industry associations, including the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), the North American Association of Food Equipment Manufacturers (NAFEM), the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), the American Society of Testing and Materials (ASTM), as well as the National Sanitation Foundation (NSF) Standard 7 Task Force on food protection and sanitation requirements for commercial refrigerators and freezers. We hold positions on numerous committees that are critical to developing robust and reliable industry test procedures and standards, including AHRI 1200, ASHRAE 72, ASTM F2143, and NSF 7.

A DIVISION OF NATIONAL REFRIGERATION & A/C PRODUCTS, INC.
539 Dunksferry Road Bensalem, Pennsylvania 19020-5908
Phone (215) 244-1400 (800) 523-7138 Fax (215) 244-9579

Continental regularly participates in rulemaking and works to engage with DOE, as well as the Environmental Protection Agency (EPA). These efforts are critical to our business because compliance with excessive regulations significantly impedes our ability to develop new products which have been a keystone of the successful growth of our business. We also work with Small Business Administration Office of Advocacy and helped initiate a small business roundtable on October 28, 2022 to discuss regulatory concerns with the commercial refrigeration industry.

Over the past six years, Continental made significant investments in research, development, production changes, and training to provide new extremely low GWP foam insulation and offer over 99% of our self-contained models with R-290 refrigerant, to ensure compliance with state restrictions and EPA regulations for the phasedown of HFCs. Multi-million-dollar capital expenditures were made for production equipment and facility upgrades, including new charging stations required to manage flammable refrigerants and new temperature-controlled foam fixtures to address issues with flow of foam insulation with low GWP blowing agent.

The recent DOE Notice of Proposed Rulemaking ("NOPR") that was published on October 10, 2023 *[EERE-2017-BT-STD-0007-0056]* is particularly concerning to Continental. We appreciate the extensive work that DOE and the staff at Guidehouse Consulting, Inc. have undertaken to develop the technical analysis and ensuing NOPR. Continental's staff have been working diligently to review and assess the subject NOPR, along with the accompanying Engineering Analysis Spreadsheet Model, Government Regulatory Impact Model Spreadsheet, National Impact Analysis Spreadsheet, Life Cycle Cost Analysis Spreadsheet and Technical Support Document that were published on September 29, 2023. We have valued the opportunity to participate in this rulemaking through feedback that we provided during manufacturer interviews conducted by Guidehouse in 2022, as well as comments previously submitted in response to the June, 2022 preliminary TSD, and input during discussions at the public meeting held at DOE on November 7, 2023. Continental supports comments submitted by NAFEM and AHRI in response to the October, 2023 NOPR.

In light of the large amount of information provided and the substantial level of energy reductions proposed by DOE, Continental submitted a request for a reasonable extension of the comment period *[see: EERE-2017-BT-STD-0007-0051]* for this NOPR, to allow small businesses like Continental sufficient time to properly review and analyze the documentation and develop appropriate responses. On December 8, 2023, Continental received DOE's response, denying any extension to the comment period. We have focused our resources on technical analysis of self-contained closed-case equipment types, which represent the majority of the products provided by Continental. We remain available to support DOE in efforts to gather available data and information in regards to this rulemaking and hope that DOE will provide additional opportunity for stakeholder feedback. We respectfully submits the following comments for consideration at this time:

Continental commends DOE for establishing definitions of separate equipment classes and standard levels in this NOPR for models with forced-air evaporators, cold-wall evaporators, roll-in construction, pass-through doors and roll-through doors. As we have noted in prior comments to DOE, these equipment types have differentiating characteristics that impact energy consumption. We also agree with DOE's determination in this NOPR not to include refrigerated buffet or preparation tables, due to the lack of test date to adequately analyze the energy consumption of these products

Continental disagrees with the Department's decision to include standards for refrigerated chef bases and griddle stands at this time. The Test Procedure Final Rule *[EERE-2017-BT-TP-0008-0042]* published on September 26, 2023, prescribed new test conditions for refrigerated chef base

and griddle stands. While we concur with this decision in the Test Procedure Final Rule, actual testing has not been conducted to form a basis for establishing standard efficiency levels at the mandated conditions. DOE has chosen to deviate from the requirement that the amended test procedures be finalized at least 180 days prior to the close of the comment period for this Standards NOPR. DOE is instead providing an interval of 76 days for review and evaluation prior to the deadline of the comment period, which is completely insufficient. As a substitute for any actual test results, the Department has utilized simulated estimates of energy consumption for these products in untested ambient test conditions as a crosswalk. DOE should not mandate energy consumption at levels that have never been tested at mandated conditions and should continue to exempt these products from efficiency standards, until sufficient physical testing at required conditions is completed. Continental remains a willing partner to work with DOE in this effort for future rulemaking.

As stated in the NOPR, EPCA requires that energy conservation standards that DOE adopts must be designed to achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. Test procedures used to establish energy standards and certify products, must indicate energy use during a representative average use period. Continental has previously noted in response to rulemaking for the DOE test procedure for commercial refrigerators and freezers that testing these products at 75°F / 55% RH ambient does not accurately represent average real-world conditions. As a result, the energy consumption levels evaluated for this rulemaking do not properly reflect actual usage conditions for these products. Designing commercial refrigerators and freezers with technology options to meet energy limits in 75°F / 55% RH ambient conditions have shown to cause performance issues when these technologies are employed in real-world commercial kitchen conditions. Continental has concluded that the maximum energy consumption levels for products of concern to our company that are proposed by DOE in this NOPR do not meet EPCA requirements and would impose excessive burden on our small business.

The table below notes the design options included by DOE in the baseline (EL0) and accumulated in the Energy Use Levels to achieve the Trial Standard Level prescribed for the proposed energy reductions in the equipment classes that are of primary interest to Continental.

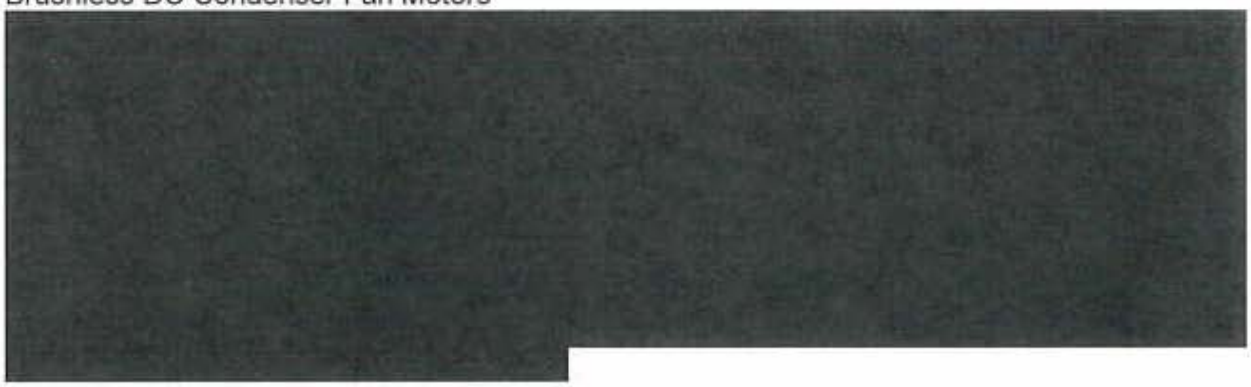
Mapping of Trial Standard Levels to qualifying Enery Use Level and Technologies for certain Product Classes									
EQUIP	TSL	ENERGY USE LEVEL							
CLASS	5	EL0	EL1	EL2	EL3	EL4	EL5	EL6	EL7
VCT.SC.M	3	LED / STD EVAP COIL / ECM EVAP FAN / W/FAN CONTROL / 2.5IN INS / DOUBLE PANE ARGON / STD CONDENSER COIL / PSC / STD RECIP COMP / Hi-EFF R290	Brushless DC Cond. Fan Motor	Variable Speed Compressor	Occupancy Sensors with Dimming	Triple Pane / Ar Fill Door	Triple Pane / Kr Fill Door	Microchannel Condenser Coil	Double Pane / Vacuum Insulated Door
VCT.SC.L	6	LED / STD EVAP COIL / PSC EVAP FAN / W/FAN CONTROL / 2.5IN INS / TRIPLE PANE ARGON / STD CONDENSER COIL / PSC / STD RECIP COMP / Hi-EFF R290	Brushless DC Evap. Fan Motor	Brushless DC Cond. Fan Motor	Triple Pane / Kr Fill Door	Variable Speed Compressor	Occupancy Sensors with Dimming	Microchannel Condenser Coil	Double Pane / Vacuum Insulated Door
VCS.SC.M	4	STD EVAP COIL / PSC EVAP FAN / NO FAN CONTROL / 2.5IN INS / STD CONDENSER COIL / PSC / STD RECIP COMP / Hi-EFF R290	Fan Control	Brushless DC Evap. Fan Motor	Brushless DC Cond. Fan Motor	Variable Speed Compressor	Microchannel Condenser Coil		
VCS.SC.L	6	STD EVAP COIL / PSC EVAP FAN / NO FAN CONTROL / 2.5IN INS / STD CONDENSER COIL / SPM / STD RECIP COMP / Hi-EFF R290	Fan Control	Brushless DC Evap. Fan Motor	Permanent Split Cap. Cond. Fan Motor	Brushless DC Cond. Fan Motor	Variable Speed Compressor	Microchannel Condenser Coil	
HCS.SC.M	2	STD EVAP COIL / ECM EVAP FAN / NO FAN CONTROL / 2.5IN INS / STD CONDENSER COIL / PSC / STD RECIP COMP / Hi-EFF R290	Fan Control	Brushless DC Cond. Fan Motor	Microchannel Condenser Coil	Variable Speed Compressor			
HCS.SC.L	1	2.5IN INS / STD CONDENSER COIL / PSC / STD RECIP COMP / Hi-EFF R290	Brushless DC Cond. Fan Motor	Variable Speed Compressor	Microchannel Condenser Coil				

Development of Continental's new line of R-290 products required entire redesign of all cooling systems, including new compressors, evaporator coils and condenser coils, along with new electrical components for compatibility with flammable refrigerants. As a result of the product design and development efforts for self-contained R-290 products, Continental evaluated all of the technologies shown in the table above. Options that were determined to be feasible and justified were incorporated into the new products. Components were selected to provide

maximum performance and reliability in harsh commercial kitchen applications, while minimizing energy consumption at DOE test conditions. The following comments on each of the proposed design options are based on our research, evaluations and experience with these technologies.

Brushless DC Evaporator Fan Motors

Brushless DC Condenser Fan Motors



Fan Controls

Microchannel Condenser Coils

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Variable Speed Compressors

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High Efficiency Glass Doors

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Occupancy Sensors with Dimming

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[redacted]

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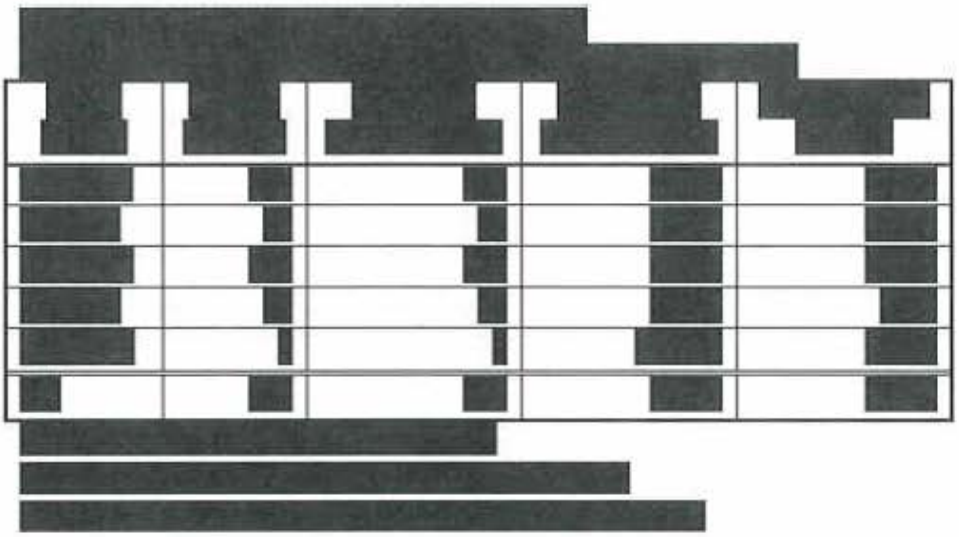

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DOE expects manufacturers will be able to identify new technologies, test, evaluate, and incorporate design options to achieve substantial energy reductions for all covered product types and configurations in time to meet an anticipated 2028 compliance date for new standards. Based on Continental's real-world product development and research efforts and experience, it is clear that this is not possible. The design options included in DOE's analysis are not technically feasible and/or economically justified to meet achieve the proposed reductions in energy use for all product configurations within each covered equipment type in this NOPR.

The energy standards proposed in the October, 2023 NOPR present an existential threat to Continental's small business. If the proposed standards were implemented, we would be forced to exit the market on many product types and configurations that we offer. This would cause substantial irreparable harm to Continental and our employees. It would reduce competition and consumer choice, also harming customers of commercial refrigeration equipment.

We understand that DOE is under statutory obligation to complete this rulemaking in a timely manner and issue a final rule for commercial refrigerators, freezers and refrigerator-freezers. Based on the significant issues identified, the Department should publish a determination not to amend standards for the products subject to the October, 2023 NOPR at this time. Subsequent rulemaking can be undertaken to address the deficiencies identified and propose reasonable standards that are technically feasible and economically justified. If a no-new standard determination is not possible, DOE should publish new standard levels that align with the recent ENERGY STAR® Program Requirements Product Specification for Commercial Refrigerators and Freezers, Eligibility Criteria Version 5.0 (Rev. Nov – 2022). This will provide energy reductions at levels which have been substantially evaluated by stakeholders.

We appreciate DOE's consideration of our comments in response to the subject NOPR. If there is a need for any additional information or data to assist in evaluating feedback provided by Continental, please feel free to contact the undersigned.

We look forward to continuing to work closely with DOE and Guidehouse to fully understand the challenges of our industry and develop reasonable standards that provide real benefit to the nation.

Sincerely,

Jeff Bauman
Manager of Regulatory Affairs