March 19, 2018

Ms. Pamela Gupta

Manager Greenhouse Gas Reduction Strategy Section Research Division California Air Resources Board 1001 I Street Sacramento, CA 95814

Re: Zero Zone Comments – California Air Resources Board Proposed Regulation for Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration and Foam End-Uses

Since 1961, Zero Zone is a leading manufacturer of high quality, energy-efficient refrigerated display cases and commercial and industrial refrigeration systems. We are located in Ramsey, Minnesota and North Prairie, Wisconsin. We are writing to comment on the proposed regulation listed above.

Zero Zone and our customers have been using refrigerants that replace high GWP refrigerants like R404A and R507A. Refrigerants we’ve used include but are not limited to R744, R717, R407A, R407C, R448A and R449A. Many customers made changes before the EPA regulations took effect. Some customers waited until the regulations required a change in refrigerant in the beginning of 2017 and 2018.

I believe chemical companies pressed for an early removal of R404A and R507A refrigerants and indicated the industry and end users are prepared for the change to high glide refrigerants. This is not correct. Component manufacturers are still developing equipment for these applications. Technicians and end users are struggling with the concepts of dew point, midpoint, bubble point, how to adjust superheat and the overall optimum operation of high glide refrigerant systems. High glide refrigerants also have slightly lower heat transfer coefficients and can fractionate during unique operating conditions which adds additional complications to their use.

Individual state regulations on allowable refrigerants will make it difficult for manufacturers to comply and raise the cost of equipment to end users. Rather than upgrade systems they may continue to use older systems with higher leak rates. A patch work of state regulations will make it difficult for the United States to develop cohesive regulations to meet long term HFC reduction goals.

We request that ARB postpone the implementation of regulations until July 1, 2019. This will allow the EPA to determine a new method to regulate these refrigerants and allow the industry to gain knowledge on the optimized use of these refrigerants.

ARB needs to clarify and modify its definition of the term “new”. We agree with item one for first installed equipment. We do not agree with item two term “expanded refrigeration system”. The definition does not go into enough detail on the expansion of a refrigeration system.

Customers have purchased racks with excess compressor capacity with the plans for future additions to their stores. They should not be required to change refrigerants when they utilize the extra compressor capacity. Will that be considered a new expanded system?

Customers may also want to add one or two refrigerated fixtures to their store and the equipment will use more refrigerant. Depending on the normal charge in the system, the installing contractor may not need to add charge and just allow the receiver to operate at a lower level. Would that be considered a new expanded system?

Customers may also want to change out older less efficient equipment with new lower charge less energy consuming equipment. They may be able to remove three existing pieces of equipment and replace them with five new pieces of equipment. Would that change be considered a new expanded system?

Updates and improvements to refrigeration systems will require California businesses to spend more money on their upgrades or put off the upgrades. This will hurt California residents. In Glenn Gallagher’s article in the NEWS, he indicated changes in regulations were for new equipment. The typical reader will think it only implies for type one -first installed equipment. To make sure California businesses know what the future holds, he could have provided the definitions for first installed and expanded systems.

You will be placing an unnecessary burden on manufacturers with the notifications on invoices and additional record keeping.

Invoices typically go to purchasing agents or clerks. Engineers and technicians involved with charging refrigeration systems will not see this information. It is a waste of resources to include that on an invoice.

In the required statement *“This equipment is designed for use with California compliant refrigerants and may only be used in California with California compliant refrigerants in accordance with California Code of Regulations, title 17, section 95374. This disclosure statement has been reviewed and approved by [THE COMPANY] and [THE COMPANY] attests, under penalty of perjury, that these statements are true and accurate.”* the term “may only be used” is confusing. We can design equipment to use the approved refrigerants. Manufacturers of remote refrigerated components cannot control what the customer eventually uses in his system. We know of no way that a piece of equipment could be designed that could only be used with the approved refrigerants. Manufacturers should not be held liable for the actions of end users if they choose to use an unapproved refrigerant.

The requirement of additional data is burdensome and in some cases undoable.

*(F) The refrigerant and full charge capacity of the equipment*. For remote pieces of equipment, manufacturers do not know the full charge capacity of the equipment after it is installed.

*(G) The complete invoice containing the disclosure statement.* For California’s unique requirements, we may simply apply a sticker to the mailed out invoice. Our electronic file will not have the disclosure statement.

ARB should clarify the rules regarding foams. It should be made clear that only foam that is manufactured in California falls under these regulations. Foam that is inside a piece of equipment manufactured in another state would not fall under these regulations.

Thank you for reviewing our concerns.

Zero Zone, Inc.

Bruce R. Hierlmeier P.E.

Director of Regulatory compliance and Refrigeration Technology