AIR-CONDITIONING, HEATING, & REFRIGERATION INSTITUTE
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Elizabeth Scheele
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Electronic submittal: https://www.arb.ca.gov/lispub/comm/bclist.php

Re: AHRI Comments Regarding California Air Resources Board 2nd Draft 15 – Day *Proposed Amendments to the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses Regulation*

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Dear Ms. Scheele,

On behalf of the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), I respectfully submit the following comments and proposal in response to California Air Resources Board's (CARB or Board) 2nd Draft 15 – Day *Proposed Amendments to the Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Chillers, Aerosols-Propellants, and Foam End-Uses Regulation* and discussions with CARB regarding the direction given from the Air Resources Board on December 10, 2020.

First, I would like to note that AHRI continues to work tirelessly to address the lack of progress related to necessary building codes within the state of California related to "other" and variable refrigerant flow (VRF) air conditioning (AC) equipment. AHRI submitted a proposal to the California Standards Building Commission (CBSC) asking for direct adoption of the safety standards into the California building codes, which was rejected. AHRI also submitted comments to address the gaps in the California State Fire Marshall (CSFM) code change proposal that would have left stakeholders unable to comply with either the state building codes or the proposed CARB transition in 2023 for many types of building occupancies which seem to have been accepted. AHRI continues to meet with stakeholders in an effort to find a path forward on this important issue.

Although, there are still some issues that need to be addressed, we thank the CARB staff for addressing many of our concerns during the rule-making process.

**Air Conditioning and the R4 Program**

**First, AHRI greatly appreciates CARB expanding the program to allow for the use of reclaimed refrigerant to service equipment.**

This change will initiate practices that are sustainable long after 2025 allowing the program to have an over-sized positive impact in encouraging proper reclamation of refrigerant. Allowing OEMs broader options will increase demand and drive the need for greater supply. Greater supply and demand will reduce the cost of reclaimed and recycled refrigerant over time and will create larger environmental benefits.

This change will create an oversized environmental benefit potentially creating a national legacy for the California R4 program and enhance the implementation of the American Innovation and Manufacturing (AIM) Act.

**In the spirit of creating an oversized environmental benefit, AHRI requests that CARB allow for Optional Early Action Credit for use of reclaimed refrigerant used prior to January 1, 2023.**

Some OEMs may be willing and eager to comply early by meeting their obligation related to reclaimed refrigerant and may be willing to start this work as soon as the regulation is finalized.

The goal of the reclaim requirements for OEMs is to kick-start the supply, demand, availability, and market viability of recycled refrigerants and avoid late schedule, back loading which could lead to shortages and market disruption. CARB should encourage early action well ahead of the actual need to grow the market for recycled refrigerants.

**AHRI strongly requests that CARB allow for Optional Early Action Credit for Refrigerant with a GWP less than 750 used in new equipment and entered commerce in *any state* prior to January 1, 2025.**

CARB has a unique opportunity to lead by encouraging nationwide early action. Early action in advance of the AIM Act simply will not take place without the proper incentive. The federal transition under the AIM Act is likely to occur on January 1, 2025. Low GWP AC units are not currently in demand anywhere in the country. California has an opportunity to incentivize manufacturers into early action nationally by transitioning to low GWP refrigerants in states where building codes allow it, such as Florida, Washington, and Texas. A full transition across the nation could be worth the equivalent of one-quarter of a billion tonnes of carbon dioxide impact in 2023 and 2024. There is significant environmental benefit if California does not limit or discourage early action in other states. California is in a unique position to drive early action in other states.

**AHRI asks CARB to harmonize the requirements for variable refrigerant flow VRF equipment with other air conditioning equipment at 10% for 2023, 2024, and with 15% in 2025 only.**

CARB has recognized that VRF equipment faces an additional challenge in the safety standards and building codes. VRF is a growing market in California with a proven track record in energy efficiency but remains very small, meaning the additional, seemingly punitive, requirements will have little overall impact on results. Increasing the requirement seems unwarranted for VRF OEMs who are working to upgrade UL 60335-2-40 Edition 4 and ASHRAE 15 to solve remaining code issues unique to this product.

**AHRI asks that the more accurate growth factor projections in line with other air conditioning equipment should be applied to VRF.**

CARB provided growth rates for specific end uses, including 4% for air conditioning and 10% for VRF. However, due to uncertainty of supply and the challenges of creating a strong new market for reclaimed refrigerants, AHRI believes a lower number should be applied. AHRI members believe more accurate growth factor projections in line with other air conditioning equipment should be applied.

**AHRI strongly requests the removal of the attestation mandate that OEMs attest to no reclaimed refrigerant being purchased, used or counted to comply with any other government requirements. This program is intended to encourage recovery and reuse of refrigerant rather than create a perverse incentive to squash other efforts to do the same.**

In addition to the continued industry and regulatory efforts to reduce the use of HFCs, AHRI also notes that there are continued efforts to develop strategies to increase the recovery and re-use of refrigerants both at the national level and within some states. This is noted specifically due to the proposed CARB requirement for "an attestation, certifying under penalty of perjury, signed and dated by a responsible official with authority, that under the R4 Program, the certified reclaimed refrigerant is not being purchased, used, or counted to comply with any other government requirement(s), private or voluntary program(s), or any other credit(s) or incentive(s)."

There is simply no way of knowing what potential future regulations and voluntary programs may take shape around the country or by the federal government in the form of regulations or industry voluntary agreements with other agencies. This California-centric requirement discourages industry from supporting additional regulation and voluntary programs which reduces the environmental benefit and thereby undermines the stated purpose of this program.

A successful reclaim program in California will jump-start the supply, demand, availability, and market viability of recycled refrigerants. CARB should not be overly prescriptive but rather encourage innovative solutions to grow the market for recycled refrigerants.

AHRI would also like to understand whether CARB has considered the legality of the attestation requirement.

**AHRI appreciates CARB's modification to allow for estimates of equipment distributed containing reclaimed refrigerant; however, AHRI still recommends removing recordkeeping requirements related to specific equipment (number and types) as unwieldy and unnecessary as long as documentation related to the acquisition is documented.**

At their factories, HVAC OEMs will pump reclaimed refrigerant into a bulk tank and fill equipment possibly across various production lines. Once the reclaimed refrigerant is mixed with the newly produced refrigerant, it is impossible to know precisely which equipment and types contain reclaimed refrigerant. Thus, it will be impossible for OEM's to create accurate records regarding which specific equipment contains some reclaimed refrigerant or how long reclaimed refrigerant volumes will be mixed in a bulk refrigerant tank.

If CARB deems some recordkeeping to be necessary regarding the use of the reclaimed refrigerant, AHRI asks that it be limited to the dates and volume of certified reclaimed refrigerant used to charge new equipment or placed into the aftermarket to service existing equipment

AHRI believes that CARB seeks precise, auditable records of the refrigerant purchased or taken ownership of rather than guesses as to which equipment may contain varying amounts of reclaimed refrigerant. Companies simply will not have any visibility as to which equipment contains varying amounts of reclaimed refrigerants.

**AHRI asks CARB to make the following upgrades to the proposed definitions in the regulation.**

**The definition of "Certified Reclaimed Refrigerant" should be updated to maximize the use of reclaimed refrigerant by allowing for the use of reclaimed refrigerant that cannot be brought to proper blend concentrations using no more than 15% new refrigerant. AHRI notes that one member has suggested that a more appropriate limit would be 25% due to technical needs to balance R-410A reclaimed blends and will provide additional technical information regarding this proposal in separate letter.**

(1) Meets all specifications in 40 C.F.R. Part 82, Subpart F, Appendix A (Specifications for Refrigerants) (January 1, 2017), which is incorporated herein by reference;
(2) Must have results of the analysis conducted to verify that reclaimed refrigerant meets the necessary specifications as required in (1) above; and
(3) Contains no greater than fifteen percent (15%) new (virgin) refrigerant by weight to meet specifications in 40 C.F.R., Part 82, Subpart F, Appendix A (Specifications for Refrigerants) (January 1, 2017). The certified reclaimer must have documentation that supports it has not exceeded the maximum allowable virgin refrigerant content.
(4) **Any reclaimed refrigerant that contains more than 15% and up to 50% new refrigerant would be discounted to 50% reclaim.**

**The definition of "new air-conditioning equipment" should not inadvertently add burdensome recordkeeping requirements for homeowners and technicians. Adding a charge limit to the three-year replacement requirement would address this issue. It should be noted that OEMs cannot manage this as they have no visibility into this calculation.**

"New Air-conditioning Equipment" means any air-conditioning equipment or system that is one of the following:

(1) First installed using new components, used components, or a combination of new or used components; or
(2) An existing system, **containing less than 25 pounds of refrigerant charge,** with a single condenser and single evaporator that has a new exterior condenser, condensing unit, or remote condensing unit; or
(3) An existing system**, containing greater than 25 pounds of refrigerant charge,** having more than one condenser and/or more than one evaporator that is modified such that the system has experienced cumulative replacements, within any three-year time period, of 75 percent or more of indoor evaporator units (by number), and 100 percent of air source or water source condensing units.

**Commercial Refrigeration**

**AHRI appreciates the clarification that chillers' temperature ranges apply to the chilled fluid leaving the chiller. AHRI notes that there is still a technical issue in the table with respect to the coldest temperatures and requests that the lowest temperature in the table be corrected to -50 °F due to the technical limitations noted below.**

The chillers' temperature was intended to be the "leaving fluid temperature" and not the "evaporator refrigerant temperature." This distinction is important because there is typically a 10 °F difference between the evaporator temperature and the fluid temperature leaving the evaporator, so the fluid leaving a -58 °F evaporator would be -48°F. For good refrigeration machine design using R-410a, the evaporator refrigerant temperature should be designed for -58°F or higher, yielding a leaving fluid temperature of -48°F or higher. ***The concern is that a -58°F fluid leaving temperature would require an evaporator refrigerant temperature of -68 °F, which would yield 3 psi of vacuum, which would not be good practice for chiller operation.*** Due to this concern, and the intent to use chilled fluid leaving temperature and not evaporator refrigerant temperature, AHRI would like to clarify the request to use -50 °F and not -58 °F.

**AHRI EPA Petition Submission**

| Chillers[1] | AR4 GWP Limit | Transition Date |
|---|---|---|
| Chillers (designed for chilled fluid leaving temperature > +35 °F) | 750 | January 1, 2024 |
| Chillers (designed for chilled fluid leaving temperature ≤+35 ° and > -10 °F) | 1500 | January 1, 2024 |
| Chillers (designed for chilled fluid leaving temperature ≤-10 ° to **-50 °F**) | 2200 | January 1, 2024 |
| Chillers (< 20lbs charge) (designed for chilled fluid leaving temperature <+35 °F) | 2200 | January 1, 2024 |
| Exceptions: Chillers <-50 °F, Medical, Scientific and Research Applications | | |

**Administrative Requirements**

**AHRI supports the concept of the variance process and asks CARB to simplify the variance process and to clarify the responsibility for the requested variance.**

AHRI members were impacted by supply chain disruptions due to the pandemic and severe weather (i.e., ice storms) in the deep south. Several members are still struggling to recover from these issues. A process for extending relief to manufacturers due to matters outside of their control is appreciated. However, the process should be simplified to consider timing to complete the defined forms and the emergency nature of these situations.

In addition, it should be clarified that the entity that has responsibility for the issue should request the variance – an end-user, an OEM or the HFC supplier-depending on the situation. It would be helpful to add that clarification as there are compliance obligations for the submitter to compensate for greenhouse gas emissions.

**AHRI asks CARB to provide VRF and chiller equipment with an exception to the effective date as allowed for commercial refrigeration equipment related to permitted installations.**

CARB provides for an exception for approved building permits for refrigeration equipment – citing *Table 3 of section 95374(c)* of this sub article on page 36 – but does not do the same for VRF or chiller equipment. AHRI requests that CARB provide an exception for all end-uses listed in *Table 3 of section 95374(c)* in the effective date. It is important that VRF and chiller equipment receives an exception to the effective date of the regulation based on approved building permits. These projects, like refrigeration systems, have long lead times and construction cycles. A commercial building design can take 1-5 years to plan and designing a system around HFC-410A or an A2L could significantly change the building layout and construction requirements. If this exception is not put in place, it could add an unnecessary cost burden on the building owner for design and possible construction changes to the building.

**AHRI requests CARB treat all reporting information as confidential business information.**

[1] This table covers both comfort cooling chillers and those used to cool industrial processes discussed under EPA's Industrial Process Refrigeration category.

It is imperative that CARB treat all reporting information as confidential business information as it may impact competitiveness and contain vital information regarding individual company supply chains and market share.

AHRI thanks CARB for the continued dialogue to find a practical way forward to meet California's ambitious climate goals. Please contact Helen Walter-Terrinoni at hwalter-terrinoni@ahrinet.org or 302-598-4608.

Sincerely,

*Helen Walter-Terrinoni*

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