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Subject: Refrigerant Management Solutions Comments on the Proposed Rule - Phasedown of Hydrofluorocarbons: Management of Certain Hydrofluorocarbons and Substitutes Under Subsection (h) of the American Innovation and Manufacturing Act of 2020

On behalf of Refrigerant Management Solutions, we appreciate the opportunity to provide comments to the Environmental Protection Agency (EPA) on its proposed rule "Phasedown of Hydrofluorocarbons: Management of Certain Hydrofluorocarbons and Substitutes Under Subsection (h) of the American Innovation and Manufacturing Act of 2020. Refrigerant Management Solutions helps refrigerant end-users transition to environmentally friendlier refrigerants, implement best practices to reduce refrigerant emissions across their facilities, and comply with the increasing number of refrigerant regulations in the US. Our client-base is made up of large food retail companies. We request clarification on several parts of the rule with respect to compliance in supermarket/food retail stores.

1. **Lowering the threshold for leak repair requirements to 15 pounds will come at enormous cost to the food retail industry (see table 1).**

Table 1[1]				
Sector	**# of Stores**	**Average Field Audit Cost per Store ($)**	**Average Record Entry Cost per Store ($)**	**Total**
Supermarkets	63,328[2]	$2,000	$250	$142,488,000
Convenience stores	150,174[3]	$700	$75	$116,384,850
Total				**$258,872,850**

   a. Nearly all supermarkets will need to perform full store asset audits to identify these appliances and document the appliance data that is required under the proposed regulation.
      i. Most supermarkets that contain appliances that have heretofore been regulated under the leak repair regulations in Section 608 do not keep records for appliances with full charge sizes under 50 pounds. The 50-pound leak repair threshold has been the foundation of every regulated company's compliance program since the beginning of federal refrigerant regulations.
      ii. While it is true that some food retail companies have voluntarily decided to keep records for smaller appliances as a best practice for financial reasons, even these companies cannot be sure that they have records for all small appliances that would fall under the regulations if the threshold were lowered to 15 lbs. Many companies that voluntarily decided to keep records did so as of a specific date, and they only added appliances to their records that were installed after that date. Also, because the Section 608 record-keeping requirements for appliances with 50+ lbs. of an ozone-depleting refrigerant never applied to these appliances, the voluntary record keeping was not undertaken with the same rigor that accompanied record-keeping for appliances at or above the 50-lb. threshold. Therefore, the limited number of retailers that did voluntarily undertake this record-keeping cannot be confident enough of their current records to rely on them if these appliances are regulated under the Aim Act.
   b. The majority of convenience stores will need to perform store audits. As the EPA states in its proposal to lower the charge size threshold, food retailers that have traditionally only

[1] Note that travel costs, software costs, and any costs to weigh-in charge sizes are not included in these estimated costs. These factors significantly increase the costs in the table.
[2] FMI accessed on 12/6/2023 at https://www.fmi.org/our-research/food-industry-facts.
[3] 2023 NACS/NielsenIQ Convenience Industry Store Count, NACS Magazine, accessed on 12/18/2023 at https://www.nacsmagazine.com/issues/february-2023/us-convenience-store-count#:~:text=There%20are%20150%2C174%20convenience%20stores,the%20COVID%2D19%20pandemic%20struck%20but%20source%20of%20that%20data%20was%202023%20NACS/NielsenIQ%20Convenience%20Industry%20Store%20Count.

used smaller appliances with less than a 50-pound charge size will now need to develop record-keeping systems and compliance programs to deal with these new federal regulations. No one knows at this point how many of the 150,174 convenience stores in the 2023 NACS/NielsenIQ Convenience Industry Store Count contain appliances with charge sizes between 15-49 pounds, but it is likely to be the vast majority of them. All convenience stores will need to perform a full store audit to determine whether they contain appliances that will fall under the new threshold and to document the data about these appliances.

c. The average price of these full store audits for supermarkets and convenience stores will be substantial at an average cost per store of at least $1,000.
    i. The total cost to supermarkets will likely be closer to $2,000 per store, including the field audit to locate the appliances and gather the data, plus the record-keeping effort to process the data and add the appliances to each company's record-keeping system. The cost to convenience stores is likely to be approximately $700; though it will take less time to audit the whole store, the "trip charge" and travel costs will be consistent regardless of the size of the store. It takes just as long to record the data points for a small appliance as it does for a large appliance.
    ii. The person performing the audits must be well-versed in the various commercial HVACR equipment types, must understand that an appliance is an independent closed-loop refrigerant circuit, and must be familiar enough with the regulations to identify and record the required data points necessary for compliance. This means that an experienced refrigeration engineer will have to be hired to perform the field audits. Most food retailers do not have engineers on staff anymore, as this function has mostly been outsourced to external engineering firms. The companies that still do have refrigeration engineers on staff are understaffed and working beyond full capacity, so these companies would also have to hire external resources to perform these audits. Service technicians are not capable of performing these audits, both from a knowledge standpoint or from a capacity perspective. Many technicians do not understand the concept of an appliance, i.e. an independent closed-loop refrigerant circuit, as evidenced by the constant record-keeping mistakes made by every service contractor company in the industry (some examples include treating HVAC units with multiple appliances as one appliance, treating rack systems with multiple case line-up circuits as separate appliances, and recording leaks on self-contained cases instead of recording the leaks on the appliance that those cases are part of).
    iii. While many of these smaller appliances are located in the same areas of the supermarket as the larger appliances, most supermarkets have small appliances in other areas also, which means that the audit will require an investigation of the entire store. These smaller appliances can be located above curbside-order areas of the store, in mezzanine areas inside the store, and even on gas station kiosks in store parking lots. Getting to some of these appliances can be difficult, requiring special ladders, and ensuring proper safety protocols are in place to prevent fall hazards. Some small in-store condensing units for walk-in coolers for instance, are located

behind walls that will need to have holes cut into them to ascertain the necessary data.

iv. The auditor will need to be provided with the current appliance list for each store, so that he/she can determine which appliances need to be added to the record-keeping system.

v. Someone at each food retail company will need to take the auditor's data and enter it into the record-keeping system, which is a time-consuming task. The minimum amount of time will be at least one hour per store on average. It is common for complicated appliance lists to take upwards of 5 hours of record-keeping.

vi. In addition to the other costs, there can often be travel costs associated with store audits.

d. Many smaller appliances that must be added to companies' record-keeping systems will need to have the full charge evacuated from the system and re-weighed into the appliance.

i. Because smaller appliances did not fall under the Section 608 leak repair regulations, full charge data was often not captured at the time of installation for field-charged appliances. In addition to the fact that the regulated community will want to ensure that they are recording accurate information about charge sizes, they will likely be very careful with these smaller appliances because it will be so easy to hit the chronically leaking appliance threshold.

ii. Any pre-charged packaged units that had at least one refrigerant leak may not contain the amount of refrigerant that is labeled on the manufacturer data plate.

iii. The estimated costs for a certified service technician to travel to a store, evacuate the refrigerant from a small appliance, and weigh-in the refrigerant to establish a correct full charge size is estimated to be $1287.50. If this is required for just one appliance at each store, which is the absolute minimum to be expected, the resulting costs for supermarkets is approximately $81,534,800 in addition to the costs in Table 1. This does not include the significant costs that would be incurred by convenience stores, because convenience stores would likely need to weigh and measure the charge sizes for all of their field-installed equipment to determine whether that equipment falls within the regulated threshold and then to determine the accurate charge size if it is regulated appliance.

e. There is a software cost associated with record-keeping software for stores that have not had to keep records under the Section 608 50-pound threshold. The average cost per store is approximately $40-$100 per store monthly.

f. There is an ongoing record-keeping cost for the additional appliances that will be part of the annual compliance cost. Due to the number of small appliances that will be added to the record-keeping burden, we estimate that the record-keeping burden will increase anywhere from 50% to 100%. It costs just as much to keep accurate compliance records for small appliances as it does for large appliances. This cost incurred by service contractor companies will be passed on to food retail end-users. The costs in the EPA's cost/benefit analysis for entering records is grossly underestimated. A more accurate

estimate is 10 minutes. The 10-minute estimate includes the assumption that the service contractor is recording entries correctly the first time and the record-keeping software loads immediately.

g. There is also a cost to have an internal compliance department audit compliance records to ensure they are complete and accurate, as well as to follow up on compliance records that are inaccurate or incomplete. A medium-sized supermarket company that currently requires a 3-person team to keep up with compliance responsibilities will have to add at least one additional person to the team to process the additional appliance records that will result from the proposed new 15-pound threshold.

2. Lowering the leak repair threshold to appliances with a charge size of 15 pounds will be burdensome in other ways.

a. There will be a large number of reportable chronically leaking appliances with full charge sizes between 15-49 pounds.

   i. Appliances with small charge sizes tend to lose their entire charge size before anyone realizes there is a leak. Therefore, any appliance with more than one leak in a calendar year will be reportable to the EPA. A 20-lb. remote condensing unit will be reportable after adding 25 pounds of refrigerant to it in a calendar year.

   ii. The amount of refrigerant added to these small appliances does not necessarily reflect the amount of refrigerant leaked out of them. Service technicians tend to put whole cylinders worth of refrigerant into appliances whether the appliance requires it or not, because they don't like carrying around partially empty cylinders on their trucks. This will lead to a larger number of chronically leaking appliances, not because these appliances are in fact leaking chronically, but rather because of the nature and size of the appliances that would be regulated under the proposed rule.

3. Food retailers should not be penalized for having successfully driven charge sizes of common appliances lower.

a. The EPA writes in the proposed regulation that technological achievements have resulted in smaller charge sizes for cooling loads. The industry has pursued efforts to reduce charge sizes in order to reduce the amount of refrigerant leaked from air conditioning and refrigeration (HVACR) appliances ever since the launch of the EPA's GreenChill Partnership in 2007. GreenChill made charge size reduction a priority, and GreenChill partners, as industry leaders, challenged equipment manufacturers to lower the amount of refrigerant needed. The GreenChill Store Certification program was especially influential in achieving this goal. To now penalize food retailers for the progress that has been made in this area is counter-productive under the motto of "no good deed goes unpunished."

b. The current charge size threshold of 50+ pounds has served, in and of itself, as a motivation to select lower-charge appliances. The fewer regulated appliances a company has, the lower the financial cost of compliance. These appliances leak less refrigerant in

situations where catastrophic leaks occur. The technology involved in lowering charge sizes costs more up-front, but food retailers have been willing to incur this cost because these smaller appliances fell under the 50-pound compliance threshold. If the EPA takes away this motivation, food retailers will be less likely to pay more for appliances with lower charge sizes.

4. Applicability of Leak Repair Requirements for Light Commercial Air Conditioning

One of the factors that will determine the extent of the additional cost burden on food retailers is the definition of the term "light commercial," because the proposed regulation states that the leak repair requirements under §84.106 do not apply to light commercial air conditioning.

Traditionally, food retail air-conditioning units have fallen under the SNAP category titled "Residential and Light Commercial Air Conditioning and Heat Pumps," not because the supermarket industry sees their HVAC as belonging to this category, but rather because there is no other SNAP category that covers the type of HVAC equipment typically used in food retail stores. Most supermarket HVAC units do not fit into the SNAP categories for chillers, and commercial HVAC units do not fall under the categories of industrial process air conditioning or motor vehicle air conditioning.

The proposed regulation would be a good opportunity for the EPA to create a different HVAC category that would be separate from residential and light commercial air conditioning and heat pumps, and would allow for more clarity on applicability for HVAC equipment used in the food retail industry.

At this time it is assumed that air conditioning systems used in supermarkets are considered light commercial air conditioning and would therefore be exempt from the leak repair requirements. If the EPA determines that supermarket air conditioning appliances do not fall under light commercial air conditioning, this needs to be clarified in the final regulation, and the significant cost burdens need to be evaluated.

5. Requirement for the owner or operator of appliances that use a refrigerant blend that contains an ODS and a HFC be required to simultaneously meet the leak repair provisions under 40 C.F.R 82.157 and the proposed provisions in this action are unnecessarily burdensome

While the EPA has noted that they intend for the leak repair requirements in this proposal to be sufficiently consistent with the requirements at 40 C.F.R. 82.157, the EPA has also requested comment on multiple items that would be significantly different than the requirements at 40 C.F.R. 82.157, including alternative leak rate calculations, lowering the proposed threshold for chronically leaking appliances, etc. Any differences whatsoever between 40 C.F.R. 82.157 and the proposed provisions in this action would be immensely complicated and significantly increase complexity and burden of the requirements. It's important for the EPA to not

underestimate the number of appliances that use a refrigerant blend that contains an ODS and an HFC.

6. Leak rate calculations for charge size adjustments

§ 84.106 Leak Repair (4)(b) states "*The owner or operator must calculate the leak rate every time refrigerant is added to an appliance unless the addition is made immediately following a retrofit, installation of a new appliance, or qualifies as a seasonal variance.*"

Installation is defined as "*the process of setting up equipment for use, which may include steps such as completing the refrigerant circuit, including charging equipment with a regulated substance or substitute for a regulated substance such that the equipment can function and is ready for use for its intended purpose*".

Excluded from this definition are adjustments that must be made to an appliance's full charge size when adding on to an existing appliance in the field, or when changing out certain components. As an example, in instances where a retailer is replacing a micro-channel condenser with a tube and fin condenser, the tube and fin condenser almost always results in the need to add refrigerant and increase the charge size of the appliance. Another example would be adding a new case line up to an existing rack; the installation of additional refrigerated cases and the expanded BTU load requires a charge adjustment on the appliance. In these scenarios, refrigerant is not being added to the existing appliance to replace refrigerant that has leaked to the atmosphere. These scenarios need to be included in the exceptions to the mandated leak rate calculation every time refrigerant is added to the appliance.

7. Requiring the use of reclaimed refrigerants for the initial charge of supermarket HVACR HFC equipment seems, at best, redundant and unnecessary.

The EPA's recent final Technology Transitions Rule (TTR) limits the refrigerants that may be used in new equipment as of 2025-2027 based on their global warming potentials (GWPs), type and size of the equipment. The term "initial charge" only applies to the first fill of new equipment, therefore under the TTR it would be illegal to use any high-GWP HFC for the initial charge.

The only scenario where the use of reclaimed refrigerant for an initial charge would be possible under the TTR is in the case of a refrigerant that falls under the GWP thresholds for new equipment. These refrigerants are so new that there is likely to be little, if any, reclaimed refrigerant available to enable a reclaimed initial charge mandate. The appliances that use these refrigerants are new appliances for the most part, and these appliances will not reach their end of life for another 15-20 years. At that point, these refrigerants will begin to be recovered from appliances, and banks of those reclaimed refrigerants can begin to be built. Until that point, requiring that these refrigerants be reclaimed when used for the initial charge of new equipment would eliminate the ability to use that equipment.

8. **The use of reclaimed refrigerant for service and repair of existing supermarket refrigeration appliances starting in 2028 should be limited to refrigerants with GWPs greater than 1500, if the reclaim mandate as of 2028 is pursued by the EPA.**

While the existing reclaim banks of all HFCs are currently inadequate to meet a servicing tail need in 2028, exempting refrigerants with GWPs less than 1500 from the reclaim mandate would serve to accelerate retrofits out of high-GWP refrigerants into HFC/HFO blend refrigerants like R-448A and R-449A, which would serve to quickly increase the amount of R-404A and R-507A especially. Including refrigerants like R-448A/R-449A in the reclaim mandate would remove all motivation for food retailers to retrofit high-GWP R-404A systems to R-448A or R-449A. Also, if it is clear when this regulation is finalized that there will be no way to service or maintain existing R-448A or R-449A equipment because there will be no reclaimed refrigerant available, food retailers will immediately stop using these refrigerants, and possibly start using higher-GWP refrigerants that are more likely to have significant banks of refrigerant available for service and maintenance.

R-448A and R-449A are used today in new appliances, which are unlikely to reach their end-of-life until 2035-2040 at the earliest. Refrigerant is reclaimed at the end-of-life, so the only opportunity to establish banks of reclaimed refrigerant is when a new generation of appliances using those refrigerants begin to be retired. While it is true that there are older appliance retrofits being carried out that use R-448A and R-449A, retrofitted appliances can be expected to continue to operate at least for an additional 10 years after the retrofit; otherwise, the cost of the retrofit cannot be justified.

Even if the reclaim mandate is limited to refrigerants with GWPs greater than 1500, it will still be very challenging to meet the food retail industry's need for reclaimed R-404A in 2028. If the EPA wants to avoid the certainty of commercial system shutdowns due to lack of refrigerant for servicing, the reclaim mandate must be postponed until 2030 at the earliest.

9. **Requirements for Disposable Cylinders**

The proposed rule states "*As of January 1, 2025, any person using a disposable cylinder must send such disposable cylinder to either a reclaimer certified under 40 C.F.R. 82.164 or fire suppressant recycler.*"

The requirement to send near-empty cylinders to reclaimers will be costly, especially considering the limited number of reclamation facilities, where these facilities are located, and the distance the cylinders will have to travel.

We encourage the EPA to consider their alternate option and allow disposable cylinders to be sent to a final processor, certified reclaimer, or recycler, whichever is closest to the cylinder

holder, to recover any remaining refrigerant. Refrigerant sent to final processors could be separated by refrigerant type, stockpiled until cylinders are full, and then sent to a reclaimer or recycler.

It's also important to note that for supermarkets, the logistics of this will be difficult as most supermarket companies do not have any direct relationships with reclaimers; most rely on their third-party service providers. It will be important to allow disposable cylinders to be sent through already existing channels, including allowing disposable cylinders to be returned to distributors or supply houses, which would then be sent by the distributor or supply houses to a final processor, certified reclaimer, or recycler.

10. Cylinder tracking requirements will impose significant costs and investment by all industry stakeholders

The proposed rule requiring machine readable tracking identifiers on all containers of HFCs that could be used for the servicing, repair, or installation of refrigerant containing equipment, including both refillable and disposable cylinders, and the requirement to record specific data during the movement of these cylinders will impose significant costs and investment by all industry stakeholders. While the EPA's Fact Sheet lists producers, importers and repackagers, the regulatory text states that "***any person*** *who refills a refillable cylinder with regulated substances or a blend containing regulated substances, is subject to requirements*". This implies that in-house service technicians and third-party service providers will also be required to register and update information in the tracking system.

The EPA has stated that the proposed tracking requirements "*would allow the technicians to verify the identity of regulated substances in a container, and that it meets any applicable regulatory requirements and technical specifications, before they use it for servicing, repair, or installation of certain equipment"*. We agree that it is critical for technicians, owners and operators, and persons transporting cylinders to know the identity of the regulated substances being used; however, the current requirements in place regarding labeling are well understood in the industry and could continue to be used to address this issue, rather than requiring a very costly and burdensome cylinder tracking program as the EPA has proposed. We encourage the EPA to withdraw the proposed labeling and tracking requirements.

11. Definition of refrigerant-containing appliance

§ 84.102 defines a refrigerant containing appliance as "*any device that contains and uses a regulated substance or substitute for a regulated substance as a refrigerant including any air conditioner, motor vehicle air conditioner, refrigerator, chiller, or freezer. For a system with multiple circuits, each independent circuit is considered a separate appliance.*"

This definition is very similar to how "appliance" is defined in Section 608. The issue of circuits in the context of appliances is a large source of confusion for the regulated community due to the word circuit being utilized by the industry in different ways. As an example, supermarket rack systems have multiple circuits; however, they are considered one appliance because there is only one closed-loop refrigerant circuit. Whereas larger HVAC units also have multiple circuits; however, these units have multiple appliances because there are multiple independent closed-loop refrigerant circuits.

California's Refrigerant Management Program defines a refrigerant circuit as "*the parts of a refrigeration system that are normally connected to each other (or are separated by isolation valves) and are designed to contain a high-GWP refrigerant. A single refrigerant circuit is defined by all piping and components that use refrigerant from a common reservoir of a high-GWP refrigerant*". This definition has been the most helpful to explain that each independent closed-loop refrigerant circuit is a separate appliance.

It would be extremely helpful if the EPA revised the definition of refrigerant containing appliance to clarify that each independent closed-loop refrigerant circuit is considered a separate appliance.

Conclusion

We support the EPA's goals and intend to do our best to help the food retail industry understand and meet the compliance requirements. The best regulations are those that the regulated community understands; therefore, the more understandable the EPA makes the regulations, the easier it will be for everyone to comply. The vast majority of non-compliance situations are caused by the failure to understand the regulations, not by a failure of the will to comply. We encourage the EPA to clarify the above-mentioned points for the benefit of all.

Sincerely,

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