



608 Regulatory Update

April 28, 2020



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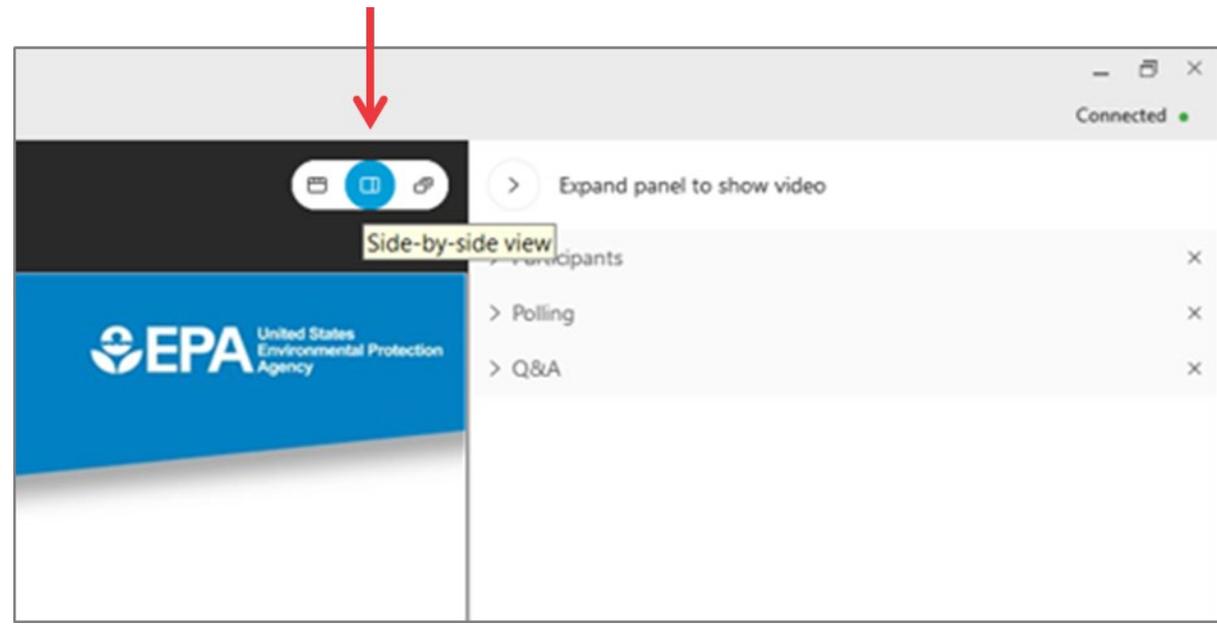
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Webinar Screen View

- ▶ There are several layout options
- ▶ We recommend the side-by-side view



Webinar Panels

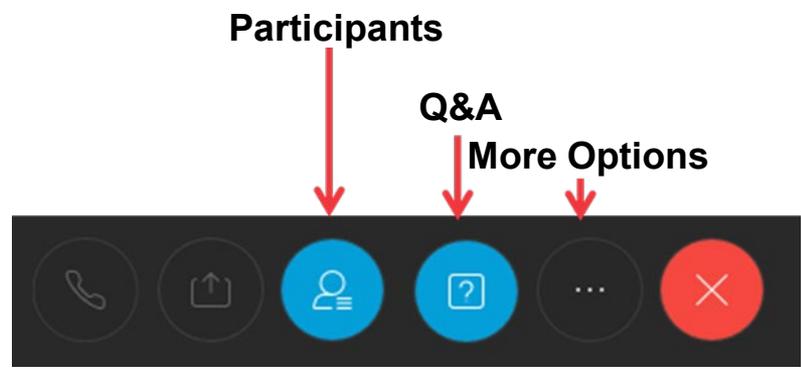
We'll use two panels

- ▶ Participants, and Question & Answer (Q&A)
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Q&A and Webinar Feedback

Q&A Session

- ▶ Participants are muted
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Feedback Form

- ▶ We value your input!
- ▶ A feedback form will pop-up when you close today’s webinar



Recording and Slides

- ▶ Webinar is being recorded
- ▶ Materials will be posted on the GreenChill website under Events and Webinars: www.epa.gov/greenchill
- ▶ To receive notification when materials are posted email: EPA-GreenChill@abtassoc.com



Kirsten Cappel



Kirsten Cappel

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Kirsten has worked for more than fifteen years at the U.S. EPA in the Office of Air and Radiation, managing both regulatory and voluntary programs. Most recently, she managed a voluntary EPA program that worked cooperatively with the solid waste industry to encourage the beneficial use biogas from landfills. She began her tenure at the Agency in the Stratospheric Protection Division, and is excited to return to the Division and work with the supermarket industry.

Gerald Wozniak



Gerald Wozniak

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Gerald has worked for more than five years at the U.S. EPA in the Office of Air and Radiation, which houses the Significant New Alternatives Policy (SNAP) program. As a technical expert, he has developed SNAP Notices and Rules and worked with stakeholders to modernize key consensus-based standards to recognize the use of flammable refrigerants. With a background in engineering and knowledge of the SNAP program, Gerald works with submitters, stakeholders, and SNAP team members to evaluate new chemicals that can be used to replace the use and resulting emissions of certain alternatives.



GreenChill Program Overview

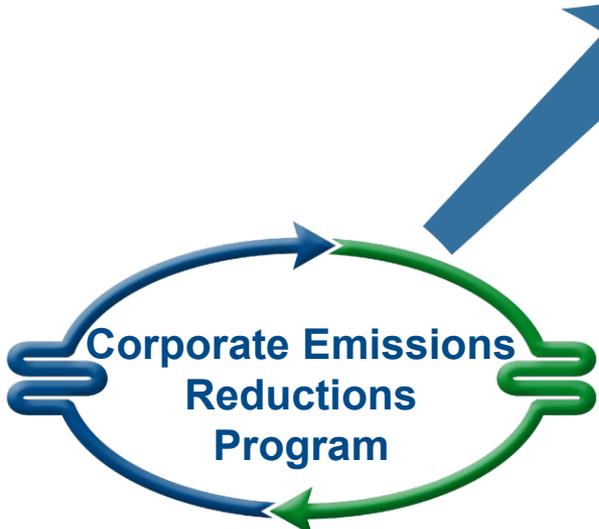
GreenChill is a voluntary EPA partnership that works with food retailers and associated stakeholders to reduce refrigerant emissions and decrease stores' impact on the ozone layer and climate system

GreenChill works to help food retailers:

- ▶ Reduce leak rates
- ▶ Lower charge sizes
- ▶ Transition to environmentally friendlier refrigerants
- ▶ Adopt green refrigeration technologies and best environmental practices

www.epa.gov/greenchill





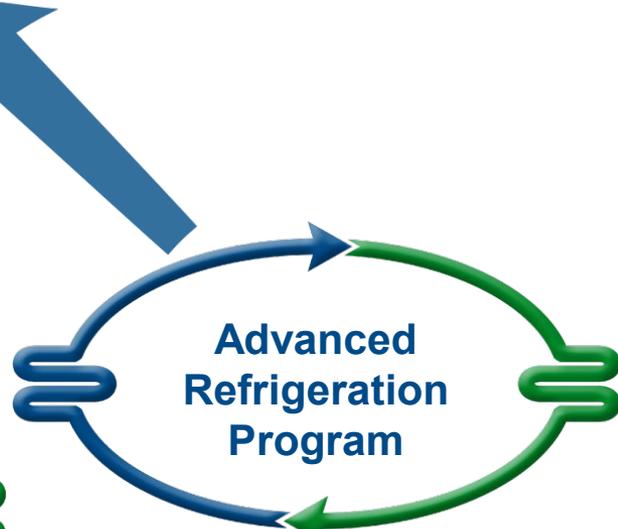
Commit

Partners measure corporate-wide emissions, set annual goals, and report annually on progress



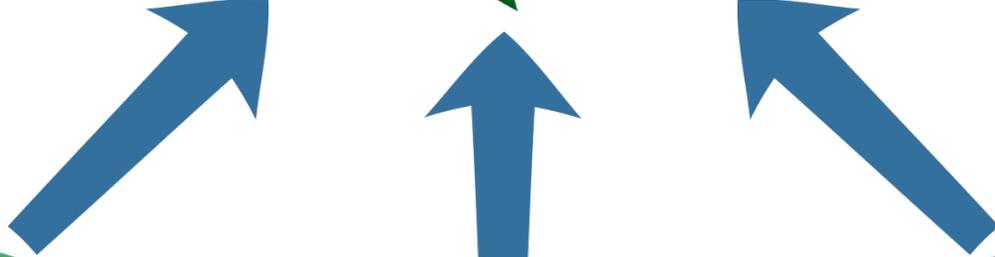
Demonstrate

Individual stores earn GreenChill certification for meeting highest standards: low charge size, use of less harmful refrigerants, and low leak rates



Share

Promote advanced refrigeration technologies, strategies, and practices through social media, webinars, and guidelines



2020 Ozone Layer Protection Milestones

► In March 2020, EPA published a new site to highlight achievements made possible because of the Clean Air Act Title VI - Stratospheric Ozone Protection

► Visit:

www.epa.gov/ozone-layer-protection-milestones-clean-air-act

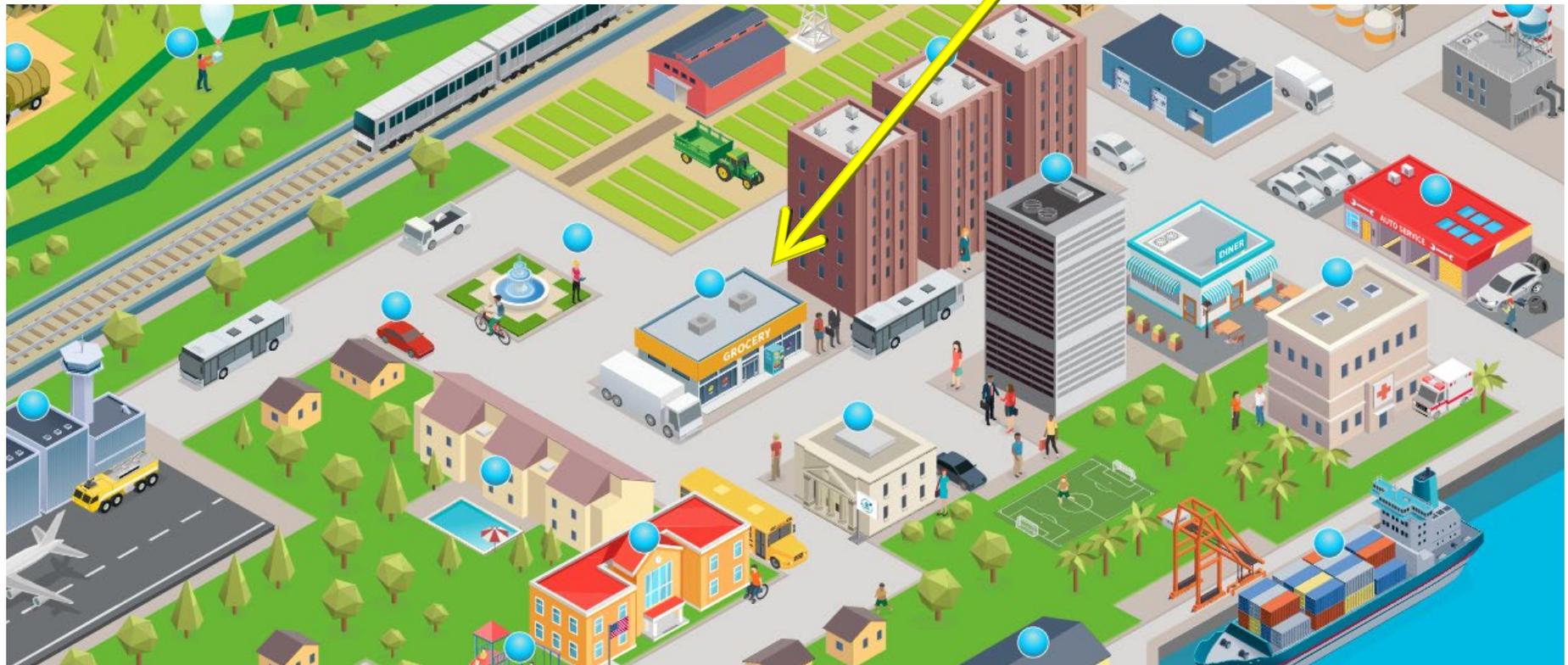
The screenshot shows the EPA website's navigation bar with links for Environmental Topics, Laws & Regulations, and About EPA. The main heading is "Ozone Layer Protection Milestones of the Clean Air Act". Below the heading is a featured article for "Strat City, USA" with a sub-headline: "Explore how successful ozone layer protection is a part of our everyday life through this interactive webpage." To the right of the article is a "CONTACT US" section with social media icons for Facebook, Twitter, and LinkedIn. Below the article is an "Overview" section with text explaining the significance of 2020 for ozone layer protection, mentioning the Clean Air Act (CAA) Title VI, the Montreal Protocol, and the phase-out of ozone-depleting substances (ODS). The text highlights the reduction in skin cancer and cataracts cases and the success of substituting safer alternatives for ODS.

Strat City, USA



An interactive webpage where users can explore how ozone layer protection affects many aspects of everyday life.

GreenChill is highlighted



Learn More



www.linkedin.com/groups/1426947/

www.epa.gov/greenchill

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THE GREENCHILL PARTNERSHIP



Today's speaker...



Luke Hall-Jordan



Luke Hall-Jordan

Chief, Stratospheric Program

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Luke has worked at U.S. EPA for more than 16 years in the Office of Air and Radiation. He leads a diverse team of experienced regulators, domestic and international policy experts, analysts, and communication professionals responsible for the proper handling and management of refrigerants; the tracking and reporting of ozone-depleting substance (ODS) production, import, export, and destruction; and the phaseout of hydrochlorofluorocarbons (HCFCs) and other ODS; among other work. He lives in Washington, DC with his wife, two kids, and two dogs.



608 Regulatory Update

April 28, 2020



Overview



- Overview of the National Refrigerant Management Program
- Rescission of the Leak Repair Requirements
- Highlights: Other Requirements
- Questions

The full set of section 608 requirements can be found at

<https://go.usa.gov/xpKhq>

Disclaimer: This presentation provides an overview for discussion purposes only. It does not supersede the Code of Federal Regulations (CFR), which should be consulted for a full statement of the existing requirements. You may also contact EPA at <https://go.usa.gov/xv948> with questions about how the regulations affect your organization.

National Refrigerant Management Program



National Refrigerant Management Program



What refrigerants are affected?

- Ozone-depleting refrigerants (i.e., chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs))
 - Subject to the Section 608(c) venting prohibition
 - Subject to the regulatory standards and requirements
- Substitute refrigerants (e.g., hydrofluorocarbons (HFCs), hydrofluoroolefins (HFOs), and perfluorocarbons (PFCs))
 - Includes any substitute refrigerant not specifically exempted
 - Subject to the Section 608(c) venting prohibition
 - Subject to the regulatory standards and requirements, **except the leak repair requirements**
- Exempt substitute refrigerants (e.g., ammonia and carbon dioxide (CO₂))
 - Not subject to the venting prohibition in specific end-uses
 - Not subject to the regulatory standards and requirements in those uses
 - May be subject to other requirements (e.g., Occupational Safety and Health Administration, EPA Risk Management Program)
 - Exempt substitutes are listed on Slide 5 and at 40 CFR 82.154

National Refrigerant Management Program



N: Nitrogen
H₂O: Water

Exempt Refrigerants	End-Use and Application									
	Household Refrigerators	Retail refrigerator stand-alone	Vending	Very Low Temp Ref	Heat Transfer	Self-contained Commercial Ice Machines	Water Coolers	IPR/processing	Room AC-Self-contained	All uses
CO ₂ , N, H ₂ O	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ammonia		✓						✓		
Hydrocarbons, Chlorine								✓		
Propane	✓	✓	✓	✓		✓	✓	✓	✓	
Isobutane	✓	✓	✓							
R-441A	✓	✓	✓						✓	
Ethane				✓	✓					

608 Refrigerant Management 2020 Rule



- As of April 10, 2020, the leak repair requirements (40 CFR 82.157) no longer apply to appliances with non-exempt substitutes such as HFCs and HFOs
- The following requirements only apply to owner/operators of appliances that contain an ozone-depleting refrigerant:
 - Calculate leak rates when adding refrigerant
 - Repair an appliance within a specified timeframe
 - Conduct verification tests
 - Conduct follow-up inspections of appliances that have exceeded the leak rate threshold
 - Prepare a retrofit or retirement plan for appliances that are not repaired
 - Report on chronically leaking appliances
 - Keep the records specified in the leak repair provisions

608 Refrigerant Management 2020 Rule



- All other refrigerant management requirements continue to apply to appliances that contain non-exempt substitute refrigerant:
 - E.g., reclamation standards, recovery equipment, sales restriction, technician certification, required vacuum levels
- EPA did not change any of the requirements for ozone-depleting refrigerants, such as HCFCs
 - E.g., leak repair and leak inspection requirements
 - All other refrigerant management requirements
- Final rule available at www.epa.gov/section608

Technician Certification



- Section 608 technician certification is required to open stationary appliances
 - No changes to the types of certifications
 - Bank of test questions updated in early 2018 for certifying new technicians remains in use
- Technician certifying organizations must annually post a list of new technicians they have certified
 - Individual technicians can opt-out

Sales Restriction



- The refrigerant sales restriction applies to all non-exempt refrigerants (including HFCs and HFOs)
- Refrigerant distributors may only sell refrigerants to certified technicians (or their employers) and must maintain records for those sales
- Small cans (under 2 pounds) of refrigerant for motor vehicle air conditioners (MVACs) are not subject to the sales restriction or recordkeeping requirement

Service Practices



- Technicians must use certified recovery and/or recycling equipment when opening an appliance
- Technicians must evacuate to the specified levels of vacuum when opening appliances
- Newly manufactured or imported recovery and/or recycling equipment models must be certified
- EPA adopted Underwriters Laboratories (UL) flammability standard as part of the recovery equipment certification to ensure the safe use of recovery equipment designed for flammable refrigerants

Changes to Appliance Disposal



- Appliances with between 5 and 50 pounds of refrigerant
 - Records required when disposing of appliances containing between 5 and 50 pounds of refrigerant:
 - Company name, location of the appliance, date of recovery, and type of refrigerant recovered for each appliance;
 - Amount of refrigerant (by type) recovered from all disposed appliances in each calendar month; and,
 - Quantity of refrigerant (by type) transferred for reclamation and/or destruction, the person to whom it was transferred, and the date
 - These records must be maintained by the technician, not the owner or operator of the appliance

Reclamation



- Reclamation purity standards are based on Air-Conditioning, Heating, and Refrigeration Institute (AHRI) Standard 700-2016
- Reclaimers must analyze each batch of reclaimed refrigerant
- Annual reporting to EPA on amounts of refrigerant received and reclaimed
- Past reclamation data can be found at www.epa.gov/section608/summary-refrigerant-reclamation-trends



Leak Rates and Duty to Repair

- The leak rate must be calculated every time refrigerant is added to an appliance containing ≥ 50 lbs. of **ozone depleting substances (ODS)** refrigerant
- Revised leak rate thresholds:
 - 30% for Industrial Process Refrigeration (IPR)
 - 20% for commercial refrigeration
 - 10% for comfort cooling
- Repairs must bring the appliance leak rate below the threshold or a retrofit/retirement plan must be developed and implemented within 1 year

As of April 10, 2020, the leak repair requirements no longer apply to appliances containing non-exempt substitute refrigerants (e.g., HFCs, HFOs, PFCs)



Verification tests

- Must demonstrate that leaks were successfully repaired
 - *Initial verification tests*- done before refrigerant is added back into the repaired appliance
 - *Follow-up verification tests*- done after the repaired appliance returns to normal operating characteristics and conditions
- Required on all appliances containing ≥ 50 lbs. of ODS refrigerant
- If either the initial or follow-up verification test indicates that repairs were not successful, you may conduct as many additional repairs and verification tests as needed within the 30-day repair period

As of April 10, 2020, the leak repair requirements no longer apply to appliances containing non-exempt substitute refrigerants (e.g., HFCs, HFOs, PFCs)



Periodic Leak Inspections

- Required for appliances that had a duty to repair because they exceeded the threshold leak rate
- Must be conducted by a certified technician
- All visible and accessible components of an appliance must be inspected
- What is not considered visible or accessible:
 - Where components are insulated, under ice, underground, behind walls, or are otherwise inaccessible;
 - Where personnel must be elevated more than 2 meters above a support surface; or,
 - Where components are unsafe to inspect
- Not required on appliances (or portions of appliances) that are continuously monitored by an automatic leak detection system

As of April 10, 2020, the leak repair requirements no longer apply to appliances containing non-exempt substitute refrigerants (e.g., HFCs, HFOs, PFCs)

Leak Repair



Periodic Leak Inspections (continued)

Leak inspection must be performed according to the following schedule:

Equipment	Full Charge	Frequency of Leak Inspections
Commercial Refrigeration and industrial process refrigeration	≥ 500 pounds	Once every three months until the owner/operator can demonstrate that the leak rate has not exceeded the threshold for four quarters in a row
	50 to 500 pounds	Once per calendar year until the owner/operator can demonstrate that the leak rate has not exceeded the threshold for one year
Comfort Cooling	≥ 50 pounds	Once per calendar year until the owner/operator can demonstrate that the leak rate has not exceeded 10% for one year

As of April 10, 2020, the leak repair requirements no longer apply to appliances containing non-exempt substitute refrigerants (e.g., HFCs, HFOs, PFCs)



Extensions to 30-Day Repair Schedule

- New for commercial refrigeration and comfort cooling appliances
- One of the extensions is for when components that must be replaced are not available within the 30-day timeframe
- Portions of repairs that do not require additional time must be completed, verified, and documented within 30 days

Extensions to 1-Year Retrofit/Retirement Schedule

- Generally only applicable to IPR
- Supermarkets and other appliance owners/operators have 18 months to retire an appliance if the replacement appliance uses an exempt substitute (e.g., CO₂)

As of April 10, 2020, the leak repair requirements no longer apply to appliances containing non-exempt substitute refrigerants (e.g., HFCs, HFOs, PFCs)



Chronically Leaking Appliances

- Owners/operators must submit reports to the EPA if any appliance leaks $\geq 125\%$ or more of its full charge in one calendar year
 - Reports must describe efforts to identify leaks and repair the appliance
 - Reports must be submitted no later than March 1 of the following year; for example, reports are due March 1, 2021 for appliances that leaked in calendar year 2020
 - This requirement applies to appliances that contain ODS, such as R-22
 - There is no required form or format
 - Some industry associations have developed templates for their members to use

As of April 10, 2020, the leak repair requirements no longer apply to appliances containing non-exempt substitute refrigerants (e.g., HFCs, HFOs, PFCs)



Chronically Leaking Appliances

- Reports should be submitted to: 608reports@epa.gov

-or-

via U.S. Mail:

Section 608 Program Manager

U.S. EPA (Mail Code: 6205T)

1200 Pennsylvania Avenue NW

Washington, DC 20460

via Courier: Please contact us at 608reports@epa.gov to arrange for delivery.

- Reports that contain confidential business information should be labeled as such and should be mailed to the agency

As of April 10, 2020, the leak repair requirements no longer apply to appliances containing non-exempt substitute refrigerants (e.g., HFCs, HFOs, PFCs)

Leak Repair



- Definition of Appliance:

Each independent circuit in a system with multiple circuits is a separate appliance

- Leak rate calculations:

Under the “Rolling Average Method” (formerly “Method 2”), in order to “close out” a leak event the owner or operator must repair all identified leaks and verify that the repairs have been successful.

- Recordkeeping:

- Technicians must provide owners and operators with invoices (including amount of refrigerant added), and results of leak inspections and verification tests
- Electronic recordkeeping encouraged

As of April 10, 2020, the leak repair requirements no longer apply to appliances containing non-exempt substitute refrigerants (e.g., HFCs, HFOs, PFCs)



Thank You

Questions?

For more information, please visit <https://go.usa.gov/xk4cR>



Contacts and Additional Information

Contact Information

- ▶ Contact the Section 608 Refrigerant Management Program at <https://go.usa.gov/xv948>

GreenChill Contact Information

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Date	Webinar Topic
May 12	Supermarket Utility Incentives
Oct 27	Defense Commissary Agency's Experience with Transcritical Carbon Dioxide

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