



Overview of Regulatory Actions Influencing the Commercial Refrigeration Industry

Overview, August 10, 2015:

Two Federal Regulatory Agencies, the Department of Energy (DOE) and the Environmental Protection Agency (EPA), are revising existing standards for manufacturers of commercial refrigeration equipment. These standards will have an impact on food retailers as early as 2016. The DOE standards have been legally challenged by manufacturers in the commercial refrigeration industry.

DOE 2017

The DOE has published final rules, effective in 2017, that impact two sectors of the commercial refrigeration industry – display cases and walk in coolers/freezers. In spite of concerns formally expressed to the DOE by Husmann and other equipment manufacturers, the DOE has produced final rules that are not always technologically feasible and may significantly impact the ability to offer certain model configurations and accessories.

DOE energy regulations: In 2017, DOE will greatly reduce the energy allowance for remote and self-contained cases based on reduction calculations specific to models and categories. Depending on the case type, some models must meet energy reductions greater than 70%. Self-contained cases with glass doors bear the greatest burden for energy reductions, but nearly all remote and self-contained models are impacted.

DOE - How equipment manufacturers may react: Manufacturers will need to redesign cases to use less energy, eliminate models, eliminate features, or discontinue complete product lines. Thus, some of today's models are at great risk of not being available in the future.

DOE - Implications for retailers: Retailers will have a more limited assortment of display cases from which to choose. Some glass door models may disappear from the market due to the extreme energy reduction targets that apply to these models. Retailers will see fewer display innovations as manufacturers spend finite resources complying with regulations.

Walk-in coolers and freezers: For walk-in coolers and freezers, a negotiated settlement to legal challenges has been agreed upon by those involved. During the challenge process, Husmann intervened on technicalities. The intervention identified errors in the calculations of the multiplex system standards and procedural errors in the development of the dedicated low temperature system standards. In the settlement, DOE agreed to rework all of the standards that Husmann specifically challenged. The date for compliance for refrigeration standards related to walk-in cooler/freezer equipment (condensing units and evaporators) has been extended to January 1, 2020. The performance

standard for energy reduction in walk-in cooler and freezer doors and panels is unchanged and compliance is required on June 5, 2017.

EPA REFRIGERANT REGULATIONS

The EPA has published a Final Rule which de-lists common HFC (hydrofluorocarbons) found in the commercial refrigeration industry (e.g. R-134a, R-404A, and R-507A). Allowed refrigerants include naturals R-290 (propane) and R-744 (carbon dioxide) as well as newly listed SNAP (Significant New Alternatives Policy) refrigerants R-450A, R-448A, R-449A and R-513A. For remote cases, existing refrigerants R-407A, R-407C and R-407F will still be allowed. Irrespective of purchase date, new equipment that is to be **installed and charged** with a de-listed refrigerant must be commissioned prior to that de-listing date.

The EPA is also de-listing HFC foam blowing agents commonly used for insulating merchandiser walls and walk-in cooler panels.

Below is a summary of the timeline for the EPA HFC de-listing and other relevant information:

1. De-listing of **HFC-404A and HFC-507A** for **new multiplex supermarket systems** will take effect on **January 1, 2017**. Refrigerants R-448A, R-449A, and R-513A were added to SNAP listings for supermarket systems.
2. De-listing of **HFC-404A and HFC-507A** for **new remote condensing systems** will take effect on **January 1, 2018**. Refrigerants R-448A, R-449A, and R-513A were added to SNAP listings for condensing units.
3. **Self-Contained (Stand Alone) cases** were divided into segregated categories. HFC-134a and HFC-404A will be de-listed on the dates shown below.
 - a. **Self-Contained Low Temperature**: The de-listing date (for **HFC-404A**) is **January 1, 2020**. In addition to R-290, R-600a, R-450A and R-744, EPA has SNAP listed R-448A, R-449A, and R-513A.
 - b. **Self-Contained Medium Temperature Compressor Capacity Less Than 2,200 BTU/hr.**: The de-listing date (for **HFC-134a and HFC-404A**) is **January 1, 2019**. In addition to R-290, R-600a, R-450A and R-744 EPA has SNAP listed R-513A. EPA did not SNAP list R448A or R449A for this application.
 - c. **Self-Contained Medium Temperature With Compressor Load Greater Than 2,200 BTU/hr.**: The de-listing date (for **HFC-134a and HFC-404A**) is **January 1, 2020**. In addition to R-290, R-600a, R-450A and R-744 EPA has SNAP listed R-513A. EPA did not SNAP list R448A or R449A for this application.
4. For all the above categories the EPA has de-listed R-404A, R-507A, R-422A, R-422C, R-422D and other refrigerants for use as retrofit refrigerants effective **July 20, 2016**.
5. Customers may add new equipment to supermarket systems using de-listed refrigerants after the de-listing date, provided the existing system has sufficient capacity. If capacity is not sufficient the new equipment must be added using a listed refrigerant.
6. Service and maintenance of existing cases/systems with de-listed refrigerants is allowed. An end user may keep their system running past the de-listing date. The EPA is not forcing end users to upgrade to a new system.
7. The use of HFC as blowing agents in foam will be phased out as of **January 1, 2020**.

EPA - How equipment manufacturers may react: Manufacturers will redesign cases to operate with new refrigerants, change components and refrigerants, source new foaming agents and delay innovations while working on compliance. EPA 2017 could force smaller self-contained equipment manufacturers with limited engineering and test resources out of business.

EPA - Implications for retailers: Retailers may pay higher prices for equipment to cover the conversion costs. Repair costs may also increase as availability of older components may be limited. In less than one year, retailers with existing R-502 systems will no longer be able to retrofit those systems with R-404A/R-507A.

Hussmann is aggressively taking steps to address all of the new DOE and EPA standards and rules.

- We are re-engineering cases and systems to operate with new refrigerants.
- We are transitioning to acceptable blowing agents in all of our operations.
- We are reducing energy consumption while maintaining performance standards.

For more information on these regulations or their impacts, please contact Ron Shebik, Principal Engineer, Global Product Compliance, Hussmann Corporation. Phone: 314-298-6483. E-mail: ron.shebik@hussmann.com.