



REFRIGERANT MANAGEMENT PROGRAM (RMP)

California Air Resources Board

August 24, 2011



INTRODUCTION

- ARB adopted statewide regulation
- Partnership with Air Districts on outreach and enforcement
- Program phases in



RMP PROGRAM OVERVIEW

- Effective Now - January 1, 2011
- Applies to large commercial and industrial operations
- Focuses on leak inspection & repair
- Repairing leaks saves businesses money

APPLICABILITY (§95381)

- Any non-residential facility with a stationary refrigeration system that uses more than 50-lbs of a high-GWP refrigerant (excludes comfort cooling)
- Any person who installs, services, or repairs a high-GWP gas refrigeration or a/c system
- Any distributor, wholesaler, reclaimer, who sells or reclaims high-GWP refrigerant



BUSINESSES AFFECTED

- Regulation Focuses on Large Commercial Refrigeration Systems and generally applies to:
 - Cold-storage warehouses
 - Distribution facilities
 - Ice rinks
 - Supermarkets/Grocery stores
 - Oil/gas production
 - Manufacturing

*Bars, restaurants, gas stations are generally not affected by this rule

COLD STORAGE WAREHOUSES



FOOD PROCESSORS



GROCERY STORES



RETAIL/MEAT PACKING FACILITIES



REGULATED REFRIGERANTS

- Hydrofluorocarbons (HFCs) and Ozone-Depleting Substances (ODS) including:
 - Chlorofluorocarbons (CFCs)
 - Hydrochlorofluorocarbons (HCFCs)
- Carbon Dioxide and Ammonia Systems are exempt



PHASE-IN SCHEDULE

- | | |
|------|---|
| 2011 | <ul style="list-style-type: none">-Follow Best Management Practices-Recordkeeping |
| 2012 | <ul style="list-style-type: none">-Large Systems (≥ 2000 lbs.) register, report and pay \$370 fee-Distributors, wholesalers, reclaimers report |
| 2014 | <ul style="list-style-type: none">-Medium systems (200-2000 lbs.) register, report and pay \$170 fee |
| 2016 | <ul style="list-style-type: none">-Small systems (50-200 lbs.) register |

KEY REQUIREMENTS

- On January 1, 2011, all RMP facilities must:
 - Conduct periodic leak inspections
 - Repair leaks within 14 days of detection
 - Follow required service practices
- Proper refrigerant sale, use, and disposal
- Facilities register, report, and submit fees to ARB – phased in beginning 2012



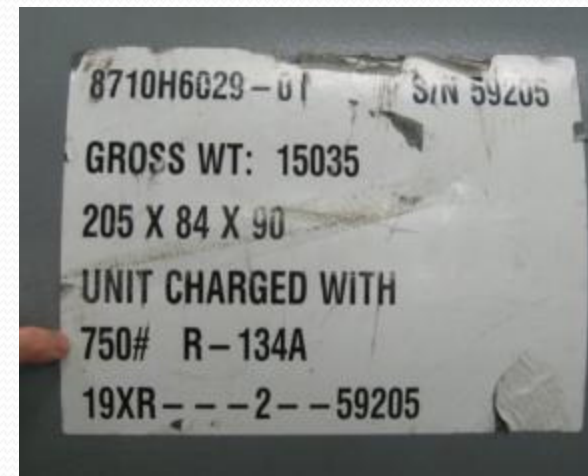


KEY ELEMENTS OF COMPLIANCE

- Determine applicability
- Inspection and monitoring for leaks
- Repair leaks
- Verify repairs
- Keep records
- Register and report to ARB

DETERMINING SYSTEM CHARGE

- Key applicability requirement
- Refer to
 - Placard
 - Installation records and/or manufacturer specifications
 - Initial refrigerant purchase
- Check with service contractor



LEAK DETECTION & MONITORING (§95385)

INSPECTION – FOR YEAR-ROUND OPERATION

- Large systems ($\geq 2,000$ lbs.):
 - Monthly unless Automatic Leak Detection (ALD) system installed
 - Continuous starting Jan. 2012, ALD must be installed, audited and calibrated annually
- Medium systems (≥ 200 to 2,000 lbs.):
 - Quarterly, unless ALD installed
- Small systems (> 50 to 200 lbs.):
 - Annual, unless ALD installed

LEAK DETECTION & MONITORING (\$95385)

INSPECTION - FOR SEASONAL OPERATION

- Leak inspection within 30 days after starting operation unless inspected within prior 90 days
- Leak inspections not required if ALD installed
- Not required to install ALD
- If ALD installed, perform annual audit and calibration

LEAK DETECTION & MONITORING (\$95385)

LEAK INSPECTIONS

- Leak inspections - continuous, quarterly, annual
- Required if adding 5 lbs. of refrigerant, or 1% of total charge (whichever is larger) to system.
- Approved Methods
 - Calibrated detection device (accurate to 10 ppm)
 - Bubble test
 - Observation of oil residue (If detected, must confirm with one of the methods above)
 - Automatic Leak Detection (ALD)

LEAK DETECTION & MONITORING (\$95385)

AUTOMATIC LEAK DETECTION (ALD) SYSTEMS

- Direct (detects refrigerant in air)
 - Detects 10 ppm of vapor
 - Alarm if ≥ 100 ppm concentration
 - Audit and calibrate annually
- Indirect (interprets system measurements)
 - Alarm if loss of 50 lbs. refrigerant or 10% of system charge (whichever is less)
 - Audit and calibrate annually



LEAK REPAIR (\$95386)

WHO IS QUALIFIED TO REPAIR A LEAK?

- Must be U.S. EPA certified AND one of the following:
 - Possess a C-38 license or C-20 license if system is also used for A/C, or be an employee of contractor with C-38 or C-20 license
 - Facility owner, operator, or employee with wages as sole compensation
 - Facility owner or contractor for a one-time undertaking or contract less than \$500

LEAK REPAIR (§95386)

TIMELINES

- All leaks repaired within 14 days of detection
 - 45-day extensions may apply under certain conditions
 - Parts or certified technician unavailable, or
 - Repair requires industrial process shutdown
 - 120-day extensions may apply under certain conditions
 - Industrial refrigeration process and subject to Mandatory GHG Reporting and
 - Repair requires industrial process shutdown
- Written records of 45- and 120-day extensions

LEAK REPAIR (\$95386)

VERIFICATION TESTING

- Initial Verification Test (After leak repair completed)
- Follow-up Verification Test
 - Conduct test during normal operating conditions
 - Must be done within 30 days
- Retrofit & retirement plan for systems that cannot be repaired

FACILITY REGISTRATION REQUIREMENTS (§95383)

- Register with ARB using online reporting system
- Deadlines:
 - Large: By March 1, 2012
 - Medium: By March 1, 2014
 - Small: By March 1, 2016
- New refrigeration systems must register by March 1 of the year after the system began operation

ANNUAL REPORT & FEE REQUIREMENTS (\$95388)

- Submit to ARB using online reporting system
- Deadlines:
 - Large : By March 1, 2012 and every year thereafter – Annual report and annual fee* of \$370
 - Medium: By March 1, 2014 and every year thereafter – Annual report and annual fee* of \$170
 - Small: Report only if requested by ARB – no annual fee

*Only one fee amount based on largest system at registered facility

RECORDKEEPING REQUIREMENTS (§95389)

REFRIGERATION FACILITIES

- Facility owners responsible for all records!
- Records must be available on-site

REQUIRED SERVICE PRACTICES (§95390)

- Complements existing federal rules
 - Leak repair by a U.S. EPA certified technician
 - No venting
 - Proper recovery of refrigerant
- Applies to High-GWP appliances
- No topping off without leak repair
- Evacuate spent cylinders



DISTRIBUTOR, WHOLESALER, RECLAIMER REQUIREMENTS

PROHIBITIONS (§95391)

- Refrigerant sales restrictions
- Used refrigerant must be reclaimed before sale
- Cylinders must be evacuated before disposal
- Certified recovery/recycling equipment

REPORTING (§95392) AND RECORDKEEPING (§95393)

- Annual Reports due to ARB beginning March 1, 2012
- Records kept onsite

ONLINE REGISTRATION AND REPORTING

TIMELINE OF DATABASE DEVELOPMENT:

- Currently working on final design and system programming
- November 2011: User acceptance testing
- December 2011: Staging and user training
- January 2012: System deployment
- Go live date January 27, 2012





ONLINE REGISTRATION AND REPORTING

DATABASE USER WORKFLOW

- Create and manage user accounts
 - Administrative and user level permissions
 - Companies and facilities create and manage their users
 - Service technicians can have account linked to facility
- Create company and facility registration records
 - Company can have many facilities
 - Each facility registers equipment and refrigerant



ONLINE REGISTRATION AND REPORTING

- Create and submit annual reports
 - Enter service and leak repair information
 - Enter refrigerant transactions
 - Batch upload data from refrigerant management software (Verisae, IHS, internal software, etc.)
- Pay fees online
- Create standard and ad hoc reports
- Businesses make informed decisions and save money

ON-GOING AND FUTURE OUTREACH

- Online Registration and Reporting Database
 - Webinars starting January 2012
- Training Video Series
 - Streaming on website Fall 2011
- FAQs and guidance documents on RMP website

FAQ Sheet

California Environmental Protection Agency / AIR RESOURCES BOARD

FREQUENTLY ASKED QUESTIONS

Refrigerant Management Program

What is the Refrigerant Management Program?
The Refrigerant Management Program is a regulatory proposal to require specific best management practices to reduce emissions of refrigerant from non-residential refrigeration systems. The proposal includes provisions similar to current federal and local regulations in effect specific to ozone-depleting substances (ODS) refrigerants and extends requirements to GWP refrigerants substitutes.

Why is the Refrigerant Management Program proposed?

- It is a board approved AB 32 Early Action Measure developed to help meet the goals of reducing CA greenhouse gas emissions to 1990 levels by 2020.
- Addresses stationary source non-residential refrigeration, which is characterized by high leak rates and minimal oversight.
- Reduces emissions of Chlorofluorocarbon (CFC), Hydrofluorocarbon (HFC), and Hydrochlorofluorocarbon (HCFC) refrigerants, which are greenhouse gases typically thousands of times more potent than carbon dioxide (CO₂).

Who must comply with the proposed regulation?
The proposed regulation will affect any person who owns or operates a facility with a stationary, non-residential refrigeration system using more than 50 pounds of a high-global warming potential (GWP) refrigerant, services any appliances using a high-GWP refrigerant, or distributes or receives a high-GWP refrigerant.

What is a high-global warming potential refrigerant?
High-global warming potential, or high GWP, refrigerants include CFC, HCFC, and HFC refrigerants. Refrigerants that are not high-GWP include ammonia and carbon dioxide (CO₂).

What is a refrigeration system and what types of facilities use them?
A refrigeration system is any appliance that is, 1) used in the retail food and cold storage warehouse sectors, 2) used in manufacturing industries directly linked to an industrial process, or 3) used for any purpose other than comfort cooling that requires require more than 50 pounds of a high-GWP refrigerant.

What are the estimated emission reductions of the proposed regulation?
The proposed regulation is estimated to reduce high-GWP refrigerant emissions by 8 million metric tonnes of carbon dioxide equivalent (MMTCO₂E). This reduction has an equivalent climate impact of removing 1.4 million cars and light trucks from the road each year.

What are the estimated costs?
On average the proposed regulation results in a cost savings of \$2 per metric tonne of carbon dioxide equivalent (MTCO₂E) in emissions reduced. The cost savings is a direct result of reduced consumption of refrigerant through the use of best management practices.

What does the proposed regulation require?
The proposed regulation requires facility registration, leak detection and monitoring, leak repair, retrofit and retirement, reporting, and recordkeeping for any person who owns or operates a facility with a stationary, non-residential refrigeration system using more than 50 pounds of a high-GWP refrigerant. Required service practices for refrigerant management are applicable to any person who services an appliance using a high-GWP refrigerant. Reporting and recordkeeping requirements are also applicable to distributors, wholesalers, and reclaimers of high-GWP refrigerants.

ENFORCEMENT APPROACH

- ARB and Districts to agree on enforcement options
 - Joint enforcement
 - ARB only
 - District only
- Agreement to ensure statewide consistency



RMP RESOURCES

- Website
<http://www.arb.ca.gov/cc/reftrack/reftrack.htm>
- Hotline
(916) 324-2517
- Email
reftrackinfo@arb.ca.gov
- Listserve
Sign up on website



QUESTIONS?