

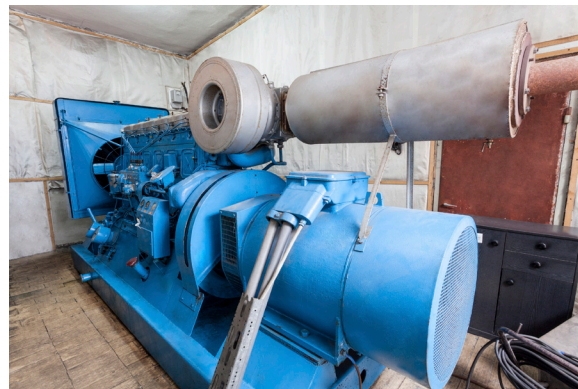
LEAK INSPECTION

Save Money Through Early Detection

Tips for leak inspecting refrigeration systems (recommendations only)¹

Sniff

- **Leak Detection:** Use an electronic leak detector at **its most sensitive setting** on the following areas:
 - Slowly move the “nose” of the probe (sniffer) as close as possible to **all mechanical room components of each refrigeration system**.
 - Walk through the sales area of the store of each refrigerated case using the sniffer.
 - Check each walk-in cooler, freezer, and refrigerated prep area in the store.
 - Check the subsurface refrigeration access pits, starting with riser pits.
 - Check accessible overhead refrigeration lines by following the path of the lines.



Look

- **Oil Seepage:** Visually check the compressor racks, evaporator, piping, and valves in the mechanical room for oil seepage. If oil seepage is observed, use soap bubbles or an electronic leak detector to identify any refrigerant leak and pinpoint the exact location.
- **Air-Cooled Condensers:** Visually check all air-cooled condensers for oil seepage underneath the unit and on finned coil surfaces.
- **Condenser Fan Blades:** Visually check condenser fan blades for cracking or tearing of the metal, especially at the point where the fan blade is riveted to the hub.
- **Piping and Fittings:** Visually check piping and fittings to ensure that there is no pipe chafing and no excessive stress on piping or fittings from thermal or mechanical pipe movement during operation.

Check

- **Receiver Levels:** Check if there's a drop in the receiver level from the previous reading. A refrigerant level drop may indicate a leak in the system.
- **Pressure Relief Valves:** Check the pressure relief valves of each system for refrigerant release. For example, a relief valve that has a balloon, blow-off cap, or other telltale sign may indicate that the relief valve has discharged.
- **High-Pressure Control Lines:** Check the control line temperature of all high-pressure switches about 12 inches from the compressor connection. If the temperature is above the mechanical room ambient temperature, there may be a leak in the control line, fitting, or control bellows.
- **Motor Mounts:** Check for imbalance in the condenser fan blades and wear in the motor mounts/bolts. Excess vibration in the blades can result in motor mount failure. This can cause the spinning motor to drop and tear the tube sheet, resulting in a high-pressure leak.

Upon detection, all refrigerant leaks must be repaired within 14 days by a U.S. EPA certified technician. The owner or operator must maintain records of all leak repairs. An initial and follow up verification test must be conducted upon completion of refrigerant leak repair. For more detailed information on the regulation or leak repair go to: <http://www.arb.ca.gov/cc/rmp/rmprule.htm>

¹ Checklist adapted from the U.S. EPA GreenChill Partnership Leak Prevention and Repair Guidelines at <http://www2.epa.gov/greenchill/reports-guidelines-and-tools#leak>

California Law

The California Air Resources Board (ARB) Refrigerant Management Program (RMP) regulation² establishes requirements for owners/operators of refrigeration systems with a high-global warming potential (high-GWP) refrigerant charge greater than 50 lbs. including:

Leak Inspections for each refrigeration system:

- Every three months if the system refrigerant charge is 200 lbs. or more; unless using an Automatic Leak Detection system.
- Annually if the system refrigerant charge is 50-199 lbs.;
- Before refrigerant is added to a refrigeration system;
- After a leak repair; and
- Automatic Leak Detection must continuously monitor systems containing 2000 lbs. or more for refrigeration components located inside a building, and be calibrated annually.



Annual Leak Repair Report for each refrigeration system must include:

- **Who** performed the service;
 - U.S. EPA certification type and number;
- **What** refrigeration system and components were repaired; and **what** caused the leak;
- **How** the refrigeration system or component was repaired;
- **When** the leak was found (Date); **when** the repair was performed (Date); and **when** the initial and follow-up leak check verifications were performed (Dates).
- **Whether** a high-GWP refrigerant was added to the system;
 - Amount and type of refrigerant added; and
 - Date the system-wide leak check was performed.

Refrigerant Purchases and Use Annual Report must include the total weight in pounds of each type of high-GWP refrigerant:

- Purchased during the calendar year;
- Charged into, and recovered from, each refrigeration system during the calendar year;
- Stored in inventory at the facility, or stored at a different location for use by the facility, on the last day of the calendar year; and
- Shipped by owner/operator for reclamation and destruction during the calendar year.

When do I need to register and report?

- Facilities with a refrigerant system charge greater than or equal to 200 lbs. are required to register and report annually by March 1 for the previous year's data.
- Facilities with a refrigerant system charge greater than 50 lbs. but less than 200 lbs. are required to register with ARB by March 1, 2016. Annual reporting is not required. Recordkeeping is required.
- Refrigerant wholesalers and reclaimers must register and report annually by March 1.
- To register and report visit www.arb.ca.gov/rmp-r3.

To obtain this document in an alternative format or language please contact the ARB's Helpline at (800) 242-4450 or at helpline@arb.ca.gov. TTY/TDD/ Speech to Speech users may dial 711 for the California Relay Service.

² RMP regulation: www.arb.ca.gov/cc/rmp/rmprule.htm