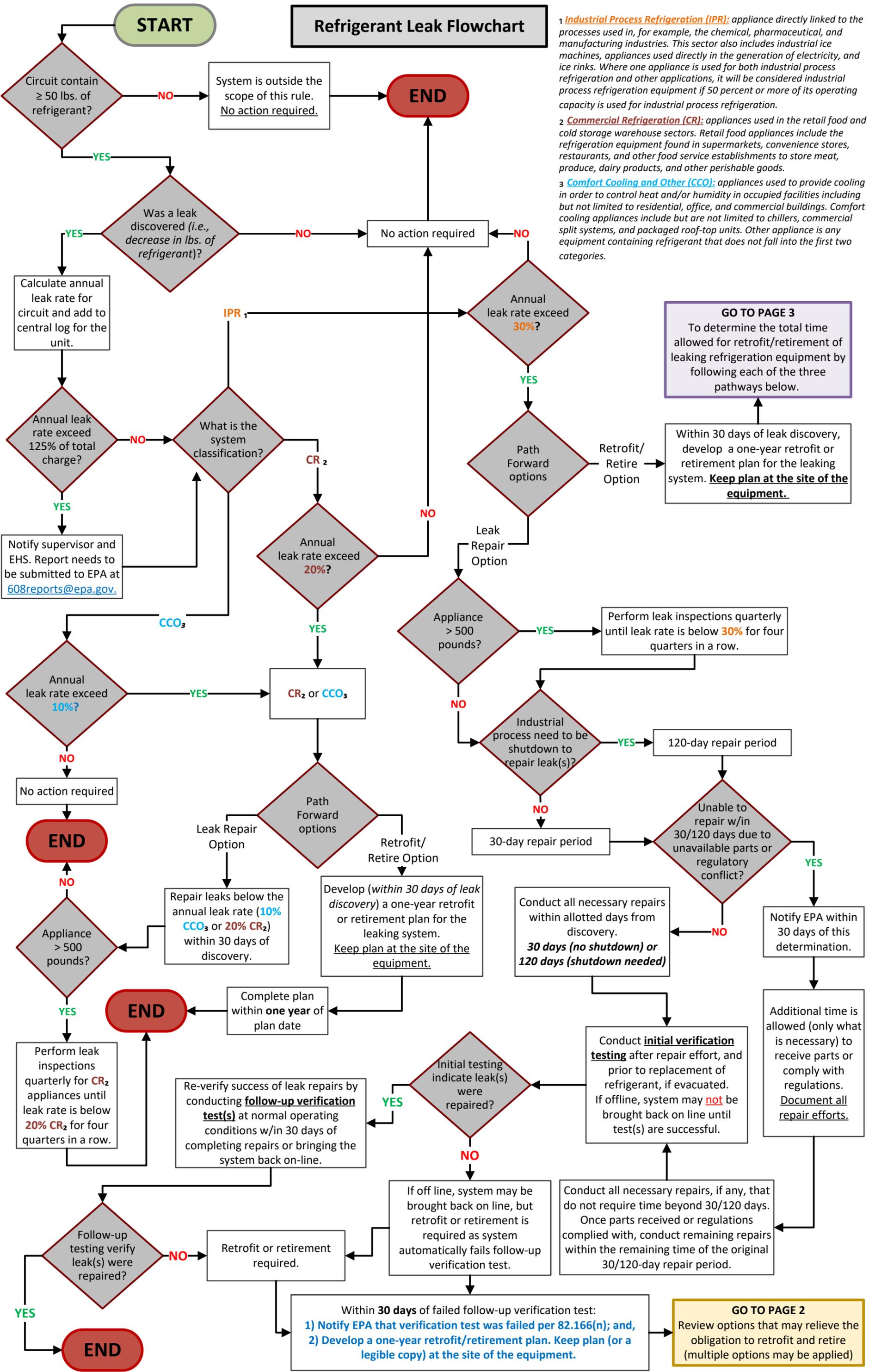


# Refrigerant Leak Flowchart



**1 Industrial Process Refrigeration (IPR):** appliance directly linked to the processes used in, for example, the chemical, pharmaceutical, and manufacturing industries. This sector also includes industrial ice machines, appliances used directly in the generation of electricity, and ice rinks. Where one appliance is used for both industrial process refrigeration and other applications, it will be considered industrial process refrigeration equipment if 50 percent or more of its operating capacity is used for industrial process refrigeration.

**2 Commercial Refrigeration (CR):** appliances used in the retail food and cold storage warehouse sectors. Retail food appliances include the refrigeration equipment found in supermarkets, convenience stores, restaurants, and other food service establishments to store meat, produce, dairy products, and other perishable goods.

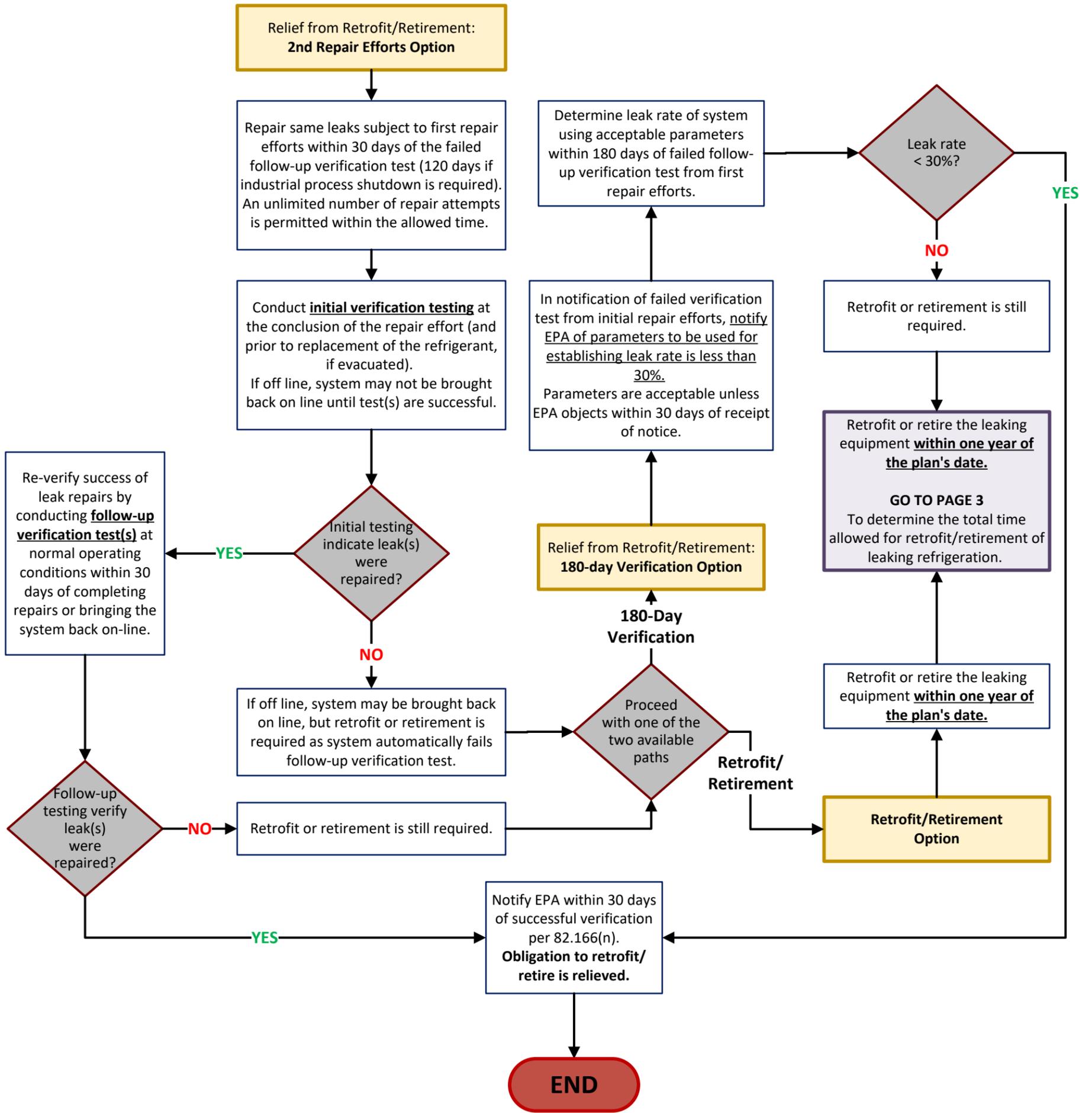
**3 Comfort Cooling and Other (CCO):** appliances used to provide cooling in order to control heat and/or humidity in occupied facilities including but not limited to residential, office, and commercial buildings. Comfort cooling appliances include but are not limited to chillers, commercial split systems, and packaged roof-top units. Other appliance is any equipment containing refrigerant that does not fall into the first two categories.

**GO TO PAGE 3**  
To determine the total time allowed for retrofit/retirement of leaking refrigeration equipment by following each of the three pathways below.

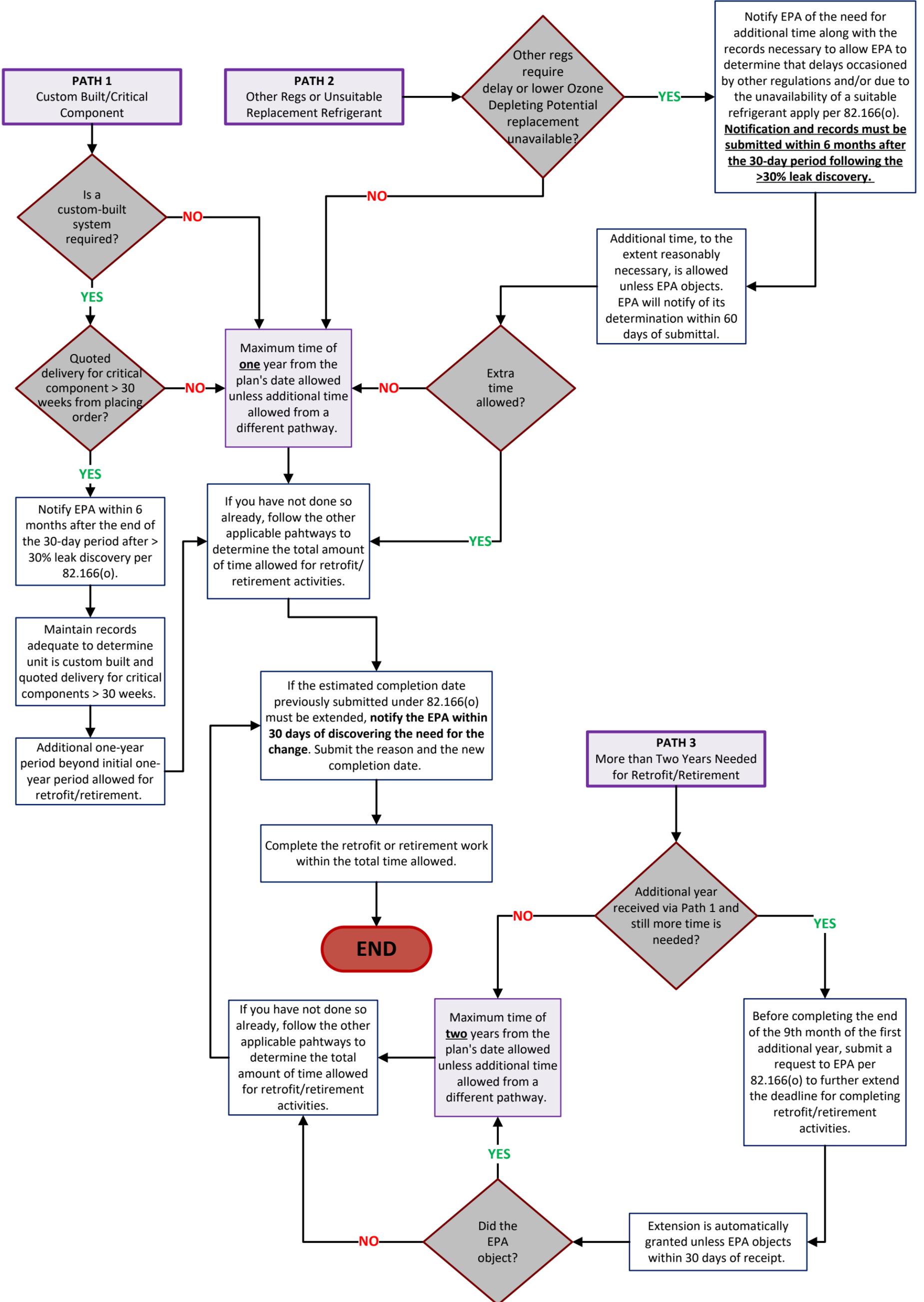
Within 30 days of leak discovery, develop a one-year retrofit or retirement plan for the leaking system. **Keep plan at the site of the equipment.**

**GO TO PAGE 2**  
Review options that may relieve the obligation to retrofit and retire (multiple options may be applied)

**PAGE 2**  
**Options to avoid retrofit/retirement of**  
**Industrial Process Refrigeration Equipment**



**PAGE 3**  
**Timing options to retrofit/retire**  
**Industrial Process Refrigeration Equipment**



Added decision to capture EPA notification triggered if appliance exceeds 125% annual leak rate.

Changed leak rate from 20% to 10% for comfort cooling. See reg below 40 CFR 82 subpart F

**(c) Requirement to Address Leaks through Appliance Repair, or Retrofitting or Retiring an Appliance.**

- (1) Owners or operators must repair appliances with a leak rate over the applicable leak rate in this paragraph in accordance with paragraphs (d) through (f) of this section unless the owner or operator elects to retrofit or retire the appliance in compliance with paragraphs (h) and (i) of this section. If the owner or operator elects to repair leaks, but fails to bring the leak rate below the applicable leak rate, the owner or operator must create and implement a retrofit or retirement plan in accordance with paragraphs (h) and (i) of this section.
- (2) Leak Rates:
  - (i) 20 percent leak rate for commercial refrigeration equipment;
  - (ii) 30 percent leak rate for industrial process refrigeration equipment; and
  - (iii) 10 percent leak rate for comfort cooling appliances or other appliances with a full charge of 50 or more pounds of refrigerant not covered by (c)(2)(i) or (ii) of this section.

Added decision for >500 lbs to capture the quarterly testing required for Industrial and Commercial as detailed below.

**Leak Inspections**

- Owners/operators must conduct leak inspections for appliances that have exceeded the applicable leak rate, according to the schedule in Table 1. Leak inspections must be conducted by a Section 608-certified technician. All visible and accessible components of an appliance must be inspected.

Table 1: Leak Inspection Requirements

Equipment	Full Charge	Frequency of Leak Inspections
<b>Commercial Refrigeration and Industrial Process Refrigeration</b>	> 500 pounds	<i>Once every three months</i> until the owner/operator can demonstrate through leak rate calculations that the leak rate has not exceeded 20% (commercial refrigeration) or 30% (IPR) for four quarters in a row.
	50 to 500 pounds	<i>Once per calendar year</i> until the owner/operator can demonstrate through the leak rate calculations that the leak rate has not exceeded 20% (commercial refrigeration) or 30% (IPR) for one year.
<b>Comfort Cooling</b>	50 or more pounds	<i>Once per calendar year</i> until the owner/operator can demonstrate through the leak rate calculations that the leak rate has not exceeded 10% for one year.

- Quarterly or annual leak inspections are not required on appliances (or portions of appliances) that are continuously monitored by an automatic leak detection system that is audited and calibrated annually.