§ 63.168 Standards: Valves in gas/vapor service and in light liquid service.

(a) The provisions of this section apply to valves that are either in gas service or in light liquid service.

(b) The owner or operator of a source subject to this subpart shall monitor all valves, except as provided in §63.162(b) of this subpart and paragraphs (h) and (i) of this section, at the intervals specified in paragraphs (c) and (d) of this section and shall comply with all other provisions of this section, except as provided in §63.171, §63.177, §63.178, and §63.179 of this subpart.

(1) The valves shall be monitored to detect leaks by the method specified in §63.180(b) of this subpart.

(2) The instrument reading that defines a leak in each phase of the standard is:

   (i) For Phase I, an instrument reading of 10,000 parts per million or greater.

   (ii) For Phase II, an instrument reading of 500 parts per million or greater.

   (iii) For Phase III, an instrument reading of 500 parts per million or greater.

(c) In Phases I and II, each valve shall be monitored quarterly.

(d) In Phase III, the owner or operator shall monitor valves for leaks at the intervals specified below:

   (1) At process units with 2 percent or greater leaking valves, calculated according to paragraph (e) of this section, the owner or operator shall either:

      (i) Monitor each valve once per month; or

      (ii) Within the first year after the onset of Phase III, implement a quality improvement program for valves that complies with the requirements of §63.175 (d) or (e) of this subpart and monitor quarterly.

   (2) At process units with less than 2 percent leaking valves, the owner or operator shall monitor each valve once each quarter, except as provided in paragraphs (d)(3) and (d)(4) of this section.

   (3) At process units with less than 1 percent leaking valves, the owner or operator may elect to monitor each valve once every 2 quarters.

   (4) At process units with less than 0.5 percent leaking valves, the owner or
operator may elect to monitor each valve once every 4 quarters.

(e)(1) Percent leaking valves at a process unit shall be determined by the following equation:

\[ \%V_L = \left( \frac{V_L}{V_T + V_C} \right) \times 100 \]

where:

\( \%V_L \) = Percent leaking valves as determined through periodic monitoring required in paragraphs (b) through (d) of this section.

\( V_L \) = Number of valves found leaking excluding nonrepairables as provided in paragraph (e)(3)(i) of this section.

\( V_T \) = Total valves monitored, in a monitoring period excluding valves monitored as required by (f)(3) of this section.

\( V_C \) = Optional credit for removed valves = 0.67 x net number (i.e., total removed-total added) of valves in organic HAP service removed from process unit after the date set forth in §63.100(k) of subpart F for existing process units, and after the date of initial start-up for new sources. If credits are not taken, then \( V_C = 0 \).

(2) For use in determining monitoring frequency, as specified in paragraph (d) of this section, the percent leaking valves shall be calculated as a rolling average of two consecutive monitoring periods for monthly, quarterly, or semiannual monitoring programs; and as an average of any three out of four consecutive monitoring periods for annual monitoring programs.

(3)(i) Nonrepairable valves shall be included in the calculation of percent leaking valves the first time the valve is identified as leaking and nonrepairable and as required to comply with paragraph (e)(3)(ii) of this section. Otherwise, a number of nonrepairable valves (identified and included in the percent leaking calculation in a previous period) up to a maximum of 1 percent of the total number of valves in organic HAP service at a process unit may be excluded from calculation of percent leaking valves for subsequent monitoring periods.

(ii) If the number of nonrepairable valves exceeds 1 percent of the total number of valves in organic HAP service at a process unit, the number of nonrepairable valves exceeding 1 percent of the total number of valves in organic HAP service shall be included in the calculation of percent leaking valves.

(f)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(3) When a leak has been repaired, the valve shall be monitored at least once within the first 3 months after its repair.

(i) The monitoring shall be conducted as specified in §63.180 (b) and (c), as appropriate, to determine whether the valve has resumed leaking.

(ii) Periodic monitoring required by paragraphs (b) through (d) of this section may be used to satisfy the requirements of this paragraph (f)(3), if the timing of the monitoring period coincides with the time specified in this paragraph (f)(3). Alternatively, other monitoring may be performed to satisfy the requirements of this paragraph (f)(3), regardless of whether the timing of the monitoring period for periodic monitoring coincides with the time specified in this paragraph (f)(3).

(iii) If a leak is detected by monitoring that is conducted pursuant to paragraph (f)(3) of this section, the owner or operator shall follow the provisions of paragraphs (f)(3)(iii)(A) and (f)(3)(iii)(B) of this section, to determine whether that valve must be counted as a leaking valve for purposes of §63.168(e) of this subpart.

(A) If the owner or operator elected to use periodic monitoring required by paragraphs (b) through (d) of this section to satisfy the requirements of paragraph (f)(3) of this section, then the valve shall be counted as a leaking valve.

(B) If the owner or operator elected to use other monitoring, prior to the periodic monitoring required by paragraphs (b) through (d) of this section, to satisfy the requirements of paragraph (f)(3) of this section, then the valve shall be counted as a leaking valve unless it is repaired and shown by periodic monitoring not to be leaking.

(g) First attempts at repair include, but are not limited to, the following practices where practicable:

(1) Tightening of bonnet bolts,
§ 63.169 Standards: Pumps, valves, connectors, and agitators in heavy liquid service; instrumentation systems; and pressure relief devices in liquid service.

(a) Pumps, valves, connectors, and agitators in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and instrumentation systems shall be monitored within 5 calendar days by the method specified in § 63.180(b) of this subpart if evidence of a potential leak to the atmosphere is found by visual, audible, olfactory, or any other detection method. If such a potential leak is repaired as required in paragraphs (c) and (d) of this section, it is not necessary to monitor the system for leaks by the method specified in § 63.180(b) of this subpart.

(b) If an instrument reading of 10,000 parts per million or greater for agitators, 5,000 parts per million or greater for pumps handling polymerizing monomers, 2,000 parts per million or greater for all other pumps (including pumps in food/medical service), or 500 parts per million or greater for valves, connectors, instrumentation systems, and pressure relief devices is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in § 63.171 of this subpart.

(c)(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(c)(3) For equipment identified in paragraph (a) of this section that is not monitored by the method specified in § 63.180(b), repaired shall mean that the visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated; that no bubbles are observed at potential leak sites during a leak check using soap solution; or that the system will hold a test pressure.

(d) First attempts at repair include, but are not limited to, the practices described under §§ 63.163(c)(2) and 63.168(g).