(A) A dual mechanical seal system that meets the requirements of § 63.1026(e)(1) will be installed;
(B) A pump that meets the requirements of § 63.1026(e)(2) will be installed; or
(C) A system that routes emissions to a process or a fuel gas system or a closed vent system and control device that meets the requirements of § 63.1026(e)(3) will be installed; and
(ii) Repair is completed as soon as practical, but not later than 6 months after the leak was detected.
(5) Delay of repair beyond a process unit or affected facility shutdown will be allowed for a valve if valve assembly replacement is necessary during the process unit or affected facility shutdown, and valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the second process unit or affected facility shutdown occurs sooner than 6 months after the first process unit or affected facility shutdown.
(e) Unsafe-to-repair—connectors. Any connector that is designated, as described in § 63.1022(d), as an unsafe-to-repair connector is exempt from the requirements of § 63.1027(d), and paragraph (a) of this section.
(f) Leak repair records. For each leak detected, the information specified in paragraphs (f)(1) through (f)(5) of this section shall be recorded and maintained pursuant to the referencing subpart.
(1) The date of first attempt to repair the leak.
(2) The date of successful repair of the leak.
(3) Maximum instrument reading measured by Method 21 of 40 CFR part 60, appendix A at the time the leak is successfully repaired or determined to be unrepairable.
(4) “Repair delayed” and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak as specified in paragraphs (f)(4)(i) and (f)(4)(ii) of this section.
(5) Dates of process unit or affected facility shutdowns that occur while the equipment is unrepaiired.
§ 63.1025 Valves in gas and vapor service and in light liquid service standards.
(a) Compliance schedule. (1) The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.
(2) The use of monitoring data generated before the regulated source became subject to the referencing subpart to qualify initially for less frequent monitoring is governed by the provisions of § 63.1023(b)(6).
(b) Leak detection. Unless otherwise specified in § 63.1021(b) or paragraph (e) of this section, or the referencing subpart, the owner or operator shall monitor all valves at the intervals specified in paragraphs (b)(3) and/or (b)(4) of this section shall be recorded and maintained pursuant to the referencing subpart.
(1) Monitoring method. The valves shall be monitored to detect leaks by the method specified in § 63.1023(b) and, as applicable, § 63.1023(c).
(2) Instrument reading that defines a leak. The instrument reading that defines a leak is 500 parts per million or greater.
(3) Monitoring frequency. The owner or operator shall monitor valves for leaks at the intervals specified in paragraphs (b)(3)(i) through (b)(3)(v) of this section and shall keep the record specified in paragraph (b)(3)(vi) of this section.
(1) If at least the greater of 2 valves or 2 percent of the valves in a process unit leak, as calculated according to paragraph (c) of this section, the owner
or operator shall monitor each valve once per month.

(ii) At process units with less than the greater of 2 leaking valves or 2 percent leaking valves, the owner or operator shall monitor each valve once each quarter, except as provided in paragraphs (b)(3)(iii) through (b)(3)(v) of this section. Monitoring data generated before the regulated source became subject to the referencing subpart and meeting the criteria of either §63.1023(b)(1) through (b)(5), or §63.1023(b)(6), may be used to qualify initially for less frequent monitoring under paragraphs (b)(3)(iii) through (b)(3)(v) of this section.

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

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

(v) At process units with less than 0.25 percent leaking valves, the owner or operator may elect to monitor each valve once every 2 years.

(vi) The owner or operator shall keep a record of the monitoring schedule for each process unit.

(4) Valve subgrouping. For a process unit or a group of process units to which this subpart applies, an owner or operator may choose to subdivide the valves in the applicable process unit or group of process units and apply the provisions of paragraph (b)(3) of this section to each subgroup. If the owner or operator elects to subdivide the valves in the applicable process unit or group of process units, then the provisions of paragraphs (b)(4)(i) through (b)(4)(viii) of this section apply.

(i) The overall performance of total valves in the applicable process unit or group of process units shall be less than 2 percent leaking valves, as detected according to paragraphs (b)(4)(i) and (b)(4)(ii) of this section and as calculated according to paragraphs (c)(1)(ii) and (c)(2) of this section.

(ii) The initial assignment or subsequent reassignment of valves to subgroups shall be governed by the provisions of paragraphs (b)(4)(i)(A) through (b)(4)(i)(C) of this section.

(A) The owner or operator shall determine which valves are assigned to each subgroup. Valves with less than one year of monitoring data or valves not monitored within the last twelve months must be placed initially into the most frequently monitored subgroup until at least one year of monitoring data have been obtained.

(B) Any valve or group of valves can be reassigned from a less frequently monitored subgroup to a more frequently monitored subgroup provided that the valves to be reassigned were monitored during the most recent monitoring period for the less frequently monitored subgroup. The monitoring results must be included with that less frequently monitored subgroup’s associated percent leaking valves calculation for that monitoring event.

(C) Any valve or group of valves can be reassigned from a more frequently monitored subgroup to a less frequently monitored subgroup provided that the valves to be reassigned have not leaked for the period of the less frequently monitored subgroup (e.g., for the last 12 months, if the valve or group of valves is to be reassigned to a subgroup being monitored annually). Nonrepairable valves may not be reassigned to a less frequently monitored subgroup.

(iii) The owner or operator shall determine every 6 months if the overall performance of total valves in the applicable process unit or group of process units is less than 2 percent leaking valves and so indicate the performance in the next Periodic Report. If the overall performance of total valves in the applicable process unit or group of process units is 2 percent leaking valves or greater, the owner or operator shall no longer subgroup and shall revert to the program required in paragraphs (b)(1) through (b)(3) of this section for that applicable process unit or group of process units. An owner or operator can again elect to comply with the valve subgrouping procedures of paragraph (b)(4) of this section if future overall performance of total valves in the process unit or group of process units is again less than 2 percent. The overall performance of total valves in the applicable process unit or group of process units shall be calculated as a
weighted average of the percent leaking valves of each subgroup according to Equation number 1:

\[
\% V_{LO} = \left( \frac{\sum_{i=1}^{n} (\% V_{L_i} \times V_i)}{\sum_{i=1}^{n} V_i} \right) \times 100
\]  

[Eq. 1]

where:
- \( \% V_{LO} \) = Overall performance of total valves in the applicable process unit or group of process units
- \( \% V_{L_i} \) = Percent leaking valves in subgroup \( i \), most recent value calculated according to the procedures in paragraphs (c)(1)(ii) and (c)(2) of this section.
- \( V_i \) = Number of valves in subgroup \( i \).
- \( n \) = Number of subgroups.

(iv) The owner or operator shall maintain records specified in paragraphs (b)(4)(iv)(A) through (b)(4)(iv)(D) of this section.

(A) Which valves are assigned to each subgroup.

(B) Monitoring results and calculations made for each subgroup for each monitoring period.

(C) Which valves are reassigned, the last monitoring result prior to reassignment, and when they were reassigned, and

(D) The results of the semiannual overall performance calculation required in paragraph (b)(4)(iii) of this section.

(v) The owner or operator shall notify the Administrator no later than 30 days prior to the beginning of the next monitoring period of the decision to subgroup valves. The notification shall identify the participating process units and the number of valves assigned to each subgroup, if applicable, and may be included in the next Periodic Report.

(vi) The owner or operator shall submit in the periodic reports the information specified in paragraphs (b)(4)(vi)(A) and (b)(4)(vi)(B).

(A) Total number of valves in each subgroup, and

(B) Results of the semiannual overall performance calculation required by paragraph (b)(4)(iii) of this section.

(vii) To determine the monitoring frequency for each subgroup, the calculation procedures of paragraph (c)(2) of this section shall be used.

(viii) Except for the overall performance calculations required by paragraphs (b)(4)(i) and (iii) of this section, each subgroup shall be treated as if it were a process unit for the purposes of applying the provisions of this section.

(c) Percent leaking valves calculation—

(1) Calculation basis and procedures. (i) The owner or operator shall decide no later than the compliance date of this part or upon revision of an operating permit whether to calculate percent leaking valves on a process unit or group of process units basis. Once the owner or operator has decided, all subsequent percentage calculations shall be made on the same basis and this shall be the basis used for comparison with the subgrouping criteria specified in paragraph (b)(4)(i) of this section.

(ii) The percent leaking valves for each monitoring period for each process unit or valve subgroup, as provided in paragraph (b)(4) of this section, shall be calculated using the following equation:

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

[Eq. 2]

where:
- \( \% V_L \) = Percent leaking valves.
- \( V_L \) = Number of valves found leaking, excluding nonrepairable valves, as provided in paragraph (c)(3) of this section, and including those valves found leaking pursuant to paragraphs (d)(2)(iii)(A) and (d)(2)(iii)(B) of this section.
- \( V_T \) = The sum of the total number of valves monitored.

(2) Calculation for monitoring frequency. When determining monitoring frequency for each process unit or valve subgroup subject to monthly, quarterly, or semiannual monitoring frequencies, the percent leaking valves shall be the arithmetic average of the percent leaking valves from the last two monitoring periods. When determining monitoring frequency for each process unit or valve subgroup subject to annual or biennial (once every 2 years) monitoring frequencies, the percent leaking valves shall be the arithmetic average of the percent leaking valves from the last three monitoring periods.
§ 63.1026 Pumps in light liquid service standards.

(a) Compliance schedule. The owner or operator shall comply with this section no later than the compliance dates specified in the referencing subpart.

(b) Leak detection. Unless otherwise specified in § 63.1021(b), § 63.1036, § 63.1037, or paragraph (e) of this section, the owner or operator shall monitor each pump to detect leaks and determine whether that valve must be counted as a leaking valve for purposes of paragraph (c)(1)(ii) of this section.

(A) If the owner or operator elected to use periodic monitoring required by paragraph (b) of this section to satisfy the requirements of paragraph (d)(2) 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 paragraph (b) of this section, to satisfy the requirements of paragraph (d)(2) 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.

(e) Special provisions for valves—(1) Unsafe-to-monitor valves. Any valve that is designated, as described in § 63.1022(c)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraphs (b) and (d)(2) of this section and the owner or operator shall monitor the valve according to the written plan specified in § 63.1022(c)(4).

(2) Difficult-to-monitor valves. Any valve that is designated, as described in § 63.1022(c)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (b) of this section and the owner or operator shall monitor the valve according to the written plan specified in § 63.1022(c)(4).

(3) Fewer than 250 valves. Any equipment located at a plant site with fewer than 250 valves in regulated material service is exempt from the requirements for monthly monitoring specified in paragraph (b)(3)(1) of this section. Instead, the owner or operator shall monitor each valve in regulated material service for leaks once each quarter, as provided in paragraphs (e)(1) and (e)(2) of this section.

§ 63.1026 Pumps in light liquid service standards.

(3) Nonrepairable valves. (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 (c)(3)(ii) of this section. Otherwise, a number of nonrepairable valves (identified and included in the percent leaking valves calculation in a previous period) up to a maximum of 1 percent of the total number of valves in regulated material service at a process unit or affected facility 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 regulated material service at a process unit or affected facility, the number of nonrepairable valves exceeding 1 percent of the total number of valves in regulated material service shall be included in the calculation of percent leaking valves.

(d) Leak repair. (1) If a leak is determined pursuant to paragraph (b), (e)(1), or (e)(2) of this section, then the leak shall be repaired using the procedures in § 63.1024, as applicable.

(2) After a leak has been repaired, the valve shall be monitored at least once within the first 3 months after its repair. The monitoring required by this paragraph is in addition to the monitoring required to satisfy the definition of repaired and first attempt at repair.

(i) The monitoring shall be conducted as specified in § 63.1023(b) and (c) of this section, as appropriate, to determine whether the valve has resumed leaking.

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

(iii) If a leak is detected by monitoring that is conducted pursuant to paragraph (d)(2) of this section, the owner or operator shall follow the provisions of paragraphs (d)(2)(iii)(A) and (d)(2)(iii)(B) of this section, to determine