

(i) The monitoring shall be conducted as specified in § 63.1004(b) and (c), 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 whether that valve must be counted as a leaking valve for purposes of paragraph (c) 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 § 63.1003(c)(1), as an unsafe-to-monitor valve, is exempt from the monitoring requirements of paragraph (b) of this section, and the owner or operator shall monitor the valve according to the written plan specified in § 63.1003(c)(5).

(2) *Difficult-to-monitor.* Any valve that is designated, as described in § 63.1003(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 § 63.1003(c)(5).

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

(4) *No detectable emissions.* (i) Any valve that is designated, as described in § 63.1003(e), as having no detectable emissions is exempt from the requirements of paragraphs (b) through (c) of this section if the owner or operator meets the criteria specified in paragraphs (e)(4)(i)(A) and (e)(4)(i)(B) of this section.

(A) Tests the valve for operation with emissions less than 500 parts per million above background as determined by the method specified in § 63.1004(c) initially upon designation, annually, and at other times requested by the Administrator, and

(B) Records the dates of each compliance demonstration, the background level measured during each compliance test, and the maximum instrument reading measured at the equipment during each compliance test.

(ii) A valve may not be designated or operated for no detectable emissions, as described in § 63.1003(e), if the valve has an instrument reading greater than 500 parts per million above background.

§ 63.1007 Pumps in light liquid service standards.

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

(b) *Leak detection.* Unless otherwise specified in § 63.1002(b), or § 63.1016 of this subpart or paragraph (e) of this section, the owner or operator shall monitor each pump monthly to detect leaks and shall comply with all other provisions of this section.

(1) *Monitoring method.* The pumps shall be monitored to detect leaks by the method specified in § 63.1004(b) of this subpart.

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(2) *Instrument reading that defines a leak.* The instrument reading that defines a leak is 10,000 parts per million.

(3) *Visual inspection.* Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. The owner or operator shall document that the inspection was conducted and the date of the inspection. If there are indications of liquids dripping from the pump seal, a leak is detected. Unless the owner or operator demonstrates (e.g., through instrument monitoring) that the indications of liquids dripping are due to a condition other than process fluid drips, the leak shall be repaired according to the procedures of paragraph (b)(4) of this section.

(4) *Visual inspection: Leak repair.* Where a leak is identified by visual indications of liquids dripping, repair shall mean that the visual indications

of liquids dripping have been eliminated.

(c) *Percent leaking pumps calculation.*

(1) 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 pumps on a process unit basis or group of process units basis. Once the owner or operator has decided, all subsequent percentage calculations shall be made on the same basis.

(2) The number of pumps at a process unit shall be the sum of all the pumps in regulated material service, except that pumps found leaking in a continuous process unit or within 1 month after startup of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only.

(3) Percent leaking pumps shall be determined by the following equation:

$$\%P_L = \left((P_L - P_S) / (P_T - P_S) \right) \times 100 \quad [\text{Eq. 1}]$$

Where:

$\%P_L$ = Percent leaking pumps

P_L = Number of pumps found leaking as determined through monthly monitoring as required in paragraph (b) of this section. Do not include results from inspection of unsafe-to-monitor pumps pursuant to paragraph (e)(6) of this section.

P_T = Total pumps in regulated material service, including those meeting the criteria in paragraphs (e)(1), (e)(2), (e)(3), and (e)(6) of this section.

P_S = Number of pumps leaking within 1 month of start-up during the current monitoring period.

(d) *Leak repair.* If a leak is detected pursuant to paragraph (b) of this section, then the leak shall be repaired using the procedures in §63.1005, as applicable, unless otherwise specified in paragraph (b)(4) of this section for leaks identified by visual indications of liquids dripping.

(e) *Special provisions for pumps—(1) Dual mechanical seal pumps.* Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (b) of this section,

provided the requirements specified in paragraphs (e)(1)(i) through (e)(1)(viii) of this section are met.

(i) The owner or operator determines, based on design considerations and operating experience, criteria applicable to the presence and frequency of drips and to the sensor that indicates failure of the seal system, the barrier fluid system, or both. The owner or operator shall keep records at the plant of the design criteria and an explanation of the design criteria, and any changes to these criteria and the reasons for the changes. This record must be available for review by an inspector.

(ii) Each dual mechanical seal system shall meet the requirements specified in paragraphs (e)(1)(ii)(A) through (e)(1)(ii)(C) of this section.

(A) Each dual mechanical seal system is operated with the barrier fluid at a pressure that is at all times (except periods of startup, shutdown, or malfunction) greater than the pump stuffing box pressure; or

(B) Equipped with a barrier fluid degassing reservoir that is routed to a

process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of subpart SS of this part; or

(C) Equipped with a closed-loop system that purges the barrier fluid into a process stream.

(iii) The barrier fluid is not in light liquid service.

(iv) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(v) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. The owner or operator shall document that the inspection was conducted and the date of the inspection. If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (e)(1)(v)(A) or (e)(1)(v)(B) of this section prior to the next required inspection.

(A) The owner or operator shall monitor the pump as specified in § 63.1004(b) to determine if there is a leak of regulated material in the barrier fluid; if an instrument reading of 10,000 parts per million or greater is measured, a leak is detected and shall be repaired using the procedures in § 63.1005; or

(B) The owner or operator shall eliminate the visual indications of liquids dripping.

(vi) If indications of liquids dripping from the pump seal exceed the criteria established in paragraph (e)(1)(i) of this section, or if based on the criteria established in paragraph (e)(1)(i) of this section the sensor indicates failure of the seal system, the barrier fluid system, or both, a leak is detected.

(vii) Each sensor as described in paragraph (e)(1)(iv) of this section is observed daily or is equipped with an alarm unless the pump is located within the boundary of an unmanned plant site.

(viii) When a leak is detected pursuant to paragraph (e)(1)(vi) of this section, it shall be repaired as specified in § 63.1005.

(2) *No external shaft.* Any pump that is designed with no externally actuated shaft penetrating the pump housing is

exempt from the requirements of paragraph (b) of this section.

(3) *Routed to a process or fuel gas system or equipped with a closed vent system.*

Any pump that is routed to a process or a fuel gas system or equipped with a closed vent system that captures and transports leakage from the pump to a control device meeting the requirements of § 63.1015 is exempt from requirements of paragraph (b) of this section.

(4) *Unmanned plant site.* Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (b)(3), and (e)(1)(v) of this section, and the daily requirements of paragraph (e)(1)(vii) of this section, provided that each pump is visually inspected as often as practical and at least monthly.

(5) *Unsafe-to-monitor pumps.* Any pump that is designated, as described in § 63.1003(c)(1), as an unsafe-to-monitor pump is exempt from the requirements of paragraph (b) of this section and the requirements of § 63.1005 and the owner or operator shall monitor the pump according to the written plan specified in § 63.1003(c)(5).

§ 63.1008 Connectors in gas and vapor service and 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 § 63.1002(b), or § 63.1016 of this subpart, or the referencing subpart, the owner or operator shall monitor all connectors within 5 days by the method specified in § 63.1004(b) if evidence of a potential leak is found by visual, audible, olfactory, or any other detection method. No monitoring is required if the evidence of a potential leak is eliminated within 5 days. If an instrument reading of 10,000 parts per million or greater is measured, a leak is detected.

(c) *Leak repair.* If a leak is detected pursuant to paragraph (b) of this section, then the leak shall be repaired using the procedures in § 63.1005, as applicable.