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or operator shall comply with the following provisions to 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 § 65.103(c)(1) as an unsafe-to-monitor valve is exempt from the requirements of paragraph (b) and (d)(2) of this section, and the owner or operator shall monitor the valve according to the written plan specified in § 65.103(c)(4).

(2) *Difficult-to-monitor valves*. Any valve that is designated as described in § 65.103(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 § 65.103(c)(4).

(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 requirements for 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 paragraph (b)(3)(iii), (iv), or (v) of this section except as provided in paragraphs (e)(1) and (2) of this section.

§ 65.107 Standards: Pumps in light liquid service.

(a) *Compliance schedule*. The owner or operator shall comply with this section no later than the implementation date specified in § 65.1(f).

(b) *Leak detection*. Unless otherwise specified in § 65.102(b) or paragraph (e) of this section, the owner or operator shall monitor each pump to detect leaks and shall comply with all other provisions of this section.

(1) *Monitoring method*. The pumps shall be monitored monthly to detect leaks by the method specified in § 65.104(b) and (c).

(2) *Instrument reading that defines a leak*. The following leak definitions determined through instrument readings apply:

(i) 5,000 parts per million or greater for pumps handling polymerizing monomers;

(ii) 2,000 parts per million or greater for pumps in food/medical service; and

(iii) 1,000 parts per million or greater for all other pumps.

(3) *Leak repair exception*. For pumps to which a 1,000 parts per million leak definition applies, repair is not required unless an instrument reading of 2,000 parts per million or greater is detected.

(4) *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 at the time of the weekly inspection, the owner or operator shall comply with either of the following procedures:

(i) The owner or operator shall monitor the pump as specified in § 65.104(b) and (c) unless the pump has already been monitored since the last routine monthly monitoring required by paragraph (b)(1) of this section. If monitoring is performed and the instrument reading indicates a leak as specified in paragraph (b)(2) of this section, a leak is detected and the leak shall be repaired using the procedures in § 65.105, except as specified in paragraph (b)(3) of this section; or

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

(c) *Percent leaking pumps calculation*. (1) The owner or operator shall decide no later than the implementation 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) If, when calculated on a 6-month rolling average, at least the greater of either 10 percent of the pumps in a process unit or three pumps in a process unit leak, the owner or operator shall implement a quality improvement program for pumps that complies with the requirements of §65.116.

(3) 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 within 1 month after startup of the pump shall not count in the percent leaking pumps calculation for that one monitoring period only.

(4) Percent leaking pumps shall be determined by Equation 107–1 of this section:

$$\%P_L = \left(\left(P_L - P_S\right)/\left(P_T - P_S\right)\right) * 100 \qquad \text{(Eq. 107-1)}$$

Where:

$\%P_L$ = Percent leaking pumps.

P_L = Number of pumps found leaking as determined through monthly monitoring as required in paragraph (b)(1) of this section.

P_S = Number of pumps leaking within 1 month of startup during the current monitoring period.

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.

(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 §65.105, as applicable.

(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 (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 of the design criteria and an explanation of the design criteria, and any changes to these criteria and the reasons for the changes.

(ii) Each dual mechanical seal system shall meet the following three requirements:

(A) Operated with the barrier fluid at a pressure that is at all times (except periods of start-up, 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 §65.115; 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 either one of the following procedures prior to the next required inspection:

(A) The owner or operator shall monitor the pump as specified in §65.104(b) and (c) to determine if there is a leak of regulated material in the barrier fluid. If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected and it shall be

repaired using the procedures in § 65.105; 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 § 65.105.

(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 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 § 65.115 is exempt from the 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)(4) 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) *Ninety percent exemption.* If more than 90 percent of the pumps at a process unit meet the criteria in either paragraph (e)(1) or (2) of this section, the process unit is exempt from the percent leaking calculation in paragraph (c) of this section.

(6) *Unsafe-to-monitor pumps.* Any pump that is designated as described in § 65.103(c)(1) as an unsafe-to-monitor pump is exempt from the requirements of paragraph (b) of this section, the monitoring and inspection requirements of paragraphs (e)(1)(v) through (viii) of this section, and the owner or operator shall monitor and repair the pump according to the written plan specified in § 65.103(c)(4).

§ 65.108 Standards: Connectors in gas/vapor service and in light liquid service.

(a) *Compliance schedule.* Except as allowed in § 65.102(b) or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in each process unit initially for leaks by either 12 months after the implementation date as specified in § 65.1(f) or 12 months after initial startup, whichever is later. If all connectors in each process unit have been monitored for leaks prior to the implementation date specified in § 65.1(f), no initial monitoring is required provided either no process changes have been made since the monitoring or the owner or operator can determine that the results of the monitoring, with or without adjustments, reliably demonstrate compliance despite process changes. If required to monitor because of a process change, the owner or operator is required to monitor only those connectors involved in the process change.

(b) *Leak detection.* Except as allowed in § 65.102(b) or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in gas/vapor and light liquid service as specified in paragraphs (a) and (b)(3) of this section.

(1) *Monitoring method.* The connectors shall be monitored to detect leaks by the method specified in § 65.104(b) and (c).

(2) *Instrument reading that defines a leak.* If an instrument reading greater than or equal to 500 parts per million is measured, a leak is detected.

(3) *Monitoring periods.* The owner or operator shall perform monitoring, subsequent to the initial monitoring required in paragraph (a) of this section, as specified in paragraphs (b)(3)(i) through (iii) of this section, and shall comply with the requirements of paragraphs (b)(3)(iv) and (v) of this section.