§ 63.163 Standards: Pumps in light liquid service.

(a) The provisions of this section apply to each pump that is in light liquid service.

(b)(1) The owner or operator of a process unit subject to this subpart shall monitor each pump monthly to detect leaks by the method specified in §63.180(b) of this subpart and shall comply with the requirements of paragraphs (a) through (d) of this section, except as provided in §63.162(b) of this subpart and paragraphs (e) through (j) of this section.

(b)(2) The instrument reading, as determined by the method as specified in §63.180(b) of this subpart, 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 5,000 parts per million or greater.

(iii) For Phase III, an instrument reading of:

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

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

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

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(3) Each pump shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal. If there are indications of liquids dripping from the pump seal, 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 paragraph (c)(3) of this section or §63.171 of this subpart.

(2) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected. First attempts at repair include, but are not limited to, the following practices where practicable:

(i) Tightening of packing gland nuts.

(ii) Ensuring that the seal flush is operating at design pressure and temperature.

(3) For pumps in Phase III 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.

(d)(1) The owner or operator shall decide no later than the first monitoring period whether to calculate percent leaking pumps on a process unit basis or on a source-wide basis. Once the owner or operator has decided, all subsequent percent calculations shall be made on the same basis.

(2) If, in Phase III, calculated on a 6-month rolling average, 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 §63.176 of this subpart.

(3) The number of pumps at a process unit shall be the sum of all the pumps in organic HAP service, except that pumps found leaking in a continuous process unit within 1 month after start-up 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 the following equation:

\[ \%P_L = \left(\frac{P_L - P_S}{P_T - P_S}\right) \times 100 \]

where:

\( P_T \) = Total pumps in organic HAP service, including those meeting the criteria in paragraphs (e) and (f) of this section

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

(e) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraphs (a) through (d) of this section, provided the following requirements are met:

(1) Each dual mechanical seal system is:

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box pressure; or

(ii) 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 §63.172 of this subpart; or

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

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

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

(4) Each pump is checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(i) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the pump shall be monitored as specified in §63.180(b) of this subpart to determine if there is a leak of organic HAP in the barrier fluid.

(ii) If an instrument reading of 1,000 parts per million or greater is measured, a leak is detected.

(5) Each sensor as described in paragraph (e)(3) 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.

(6)(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.
§ 63.164 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of process fluid to the atmosphere, except as provided in §63.162(b) of this subpart and paragraphs (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) of this section shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system 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 §63.172 of this subpart; or

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

(c) The barrier fluid shall not be in light liquid service.

(d) Each barrier fluid system as described in paragraphs (a) through (c) of this section shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) of this section shall be observed daily or shall be equipped with an alarm unless the compressor is located within the boundary of an unmanned plant site.

(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(e)(2) If the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined under paragraph (e)(1) of this section, a leak is detected.

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