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(i) A release indicator must be properly installed on each pressure relief device in such a way that it will indicate when an emission release has occurred.

(ii) Each indicator must be equipped with an alert system that will notify an operator immediately and automatically when the pressure relief device is open. The alert must be located such that the signal is detected and recognized easily by an operator.

(iii) For any instance that the release indicator indicates that a pressure relief device is open, you must notify operators that a pressure release has occurred, and, within 10 days of the release, you must submit to the Administrator the report specified in § 63.11985(c)(7). This report is required even if you elect to follow the procedures specified in § 63.11895 to establish an affirmative defense.

(2) For pressure relief devices in HAP service that discharge directly to a closed vent system and control device designed and operated in accordance with the requirements in §§ 63.11925 through 63.11950, and are required to meet process vent emission limits in Table 1 or 2 to this subpart. Any release to the atmosphere without meeting the process vent emission limits in Table 1 or 2 to this subpart, constitutes a violation of this rule. You must notify operators that a pressure release has occurred, and, within 10 days of the release, you must submit to the Administrator the report specified in § 63.11985(c)(7). This report is required even if you elect to follow the procedures specified in § 63.11895(b) to establish an affirmative defense.

§ 63.11920 What are my initial and continuous compliance requirements for heat exchange systems?

(a) Except as provided in paragraph (b) of this section, you must perform monitoring to identify leaks of volatile organic compounds from each heat exchange system in HAP service subject to the requirements of this subpart according to the procedures in paragraphs (a)(1) through (4) of this section.

(1) *Monitoring locations for closed-loop recirculation heat exchange systems.* For each closed loop recirculating heat exchange system, you must collect and analyze a sample from the location(s) described in either paragraph (a)(1)(i) or (ii) of this section.

(i) Each cooling tower return line prior to exposure to air for each heat exchange system in HAP service.

(ii) Selected heat exchanger exit line(s) so that each heat exchanger or group of heat exchangers within a heat exchange system is covered by the selected monitoring location(s).

(2) *Monitoring locations for once-through heat exchange systems.* For each once-through heat exchange system, you must collect and analyze a sample from the location(s) described in paragraph (a)(2)(i) of this section. You may also elect to collect and analyze an additional sample from the location(s) described in paragraph (a)(2)(ii) of this section.

(i) Selected heat exchanger exit line(s) so that each heat exchanger or group of heat exchangers in HAP service within a heat exchange system is covered by the selected monitoring location(s).

(ii) The inlet water feed line for a once-through heat exchange system prior to any heat exchanger. If multiple heat exchange systems use the same water feed (i.e., inlet water from the same primary water source), you may monitor at one representative location and use the monitoring results for that sampling location for all heat exchange systems that use that same water feed.

(3) *Monitoring method.* You must determine the total strippable volatile organic compounds concentration or vinyl chloride concentration at each monitoring location using one of the analytical methods specified in paragraphs (a)(3)(i) through (iii) of this section.

(i) Determine the total strippable volatile organic compounds concentration (in parts per million by volume) as methane from the air stripping testing system using Modified El Paso Method (incorporated by reference, see § 63.14) using a flame ionization detector analyzer.

(ii) Determine the total strippable volatile organic compounds concentration (in parts per billion by weight) in the cooling water using Method 624 at 40 CFR part 136, appendix A. The target

list of compounds shall be generated based on a pre-survey sample and analysis by gas chromatography/mass spectrometry and process knowledge to include all compounds that can potentially leak into the cooling water. If Method 624 of part 136, appendix A is not applicable for all compounds that can potentially leak into the cooling water for a given heat exchange system, you cannot use this monitoring method for that heat exchange system.

(iii) Determine the vinyl chloride concentration (in parts per billion by weight) in the cooling water using Method 107 at 40 CFR part 61, appendix A.

(4) *Monitoring frequency*. You must determine the total strippable volatile organic compounds or vinyl chloride concentration at each monitoring location at the frequencies specified in paragraphs (a)(4)(i) and (ii) of this section.

(i) For heat exchange systems for which you have not delayed repair of any leaks, monitor at least monthly. You may elect to monitor more frequently than the minimum frequency specified in this paragraph.

(ii) If you elect to monitor the inlet water feed line for a once-through heat exchange system as provided in paragraph (a)(2)(ii) of this section, you must monitor the inlet water feed line at the same frequency used to monitor the heat exchange exit line(s), as required in paragraph (a)(2)(i) of this section.

(b) A heat exchange system is not subject to the monitoring requirements in paragraph (a) of this section if it meets any one of the criteria in paragraphs (b)(1) through (3) of this section.

(1) All heat exchangers that are in HAP service within the heat exchange system operate with the minimum pressure on the cooling water side at least 35 kilopascals greater than the maximum pressure on the process side.

(2) The heat exchange system does not contain any heat exchangers that are in HAP service.

(3) The heat exchange system has a maximum cooling water flow rate of 10 gallons per minute or less.

(c) The leak action levels for both existing and new sources are specified in paragraphs (c)(1) through (3) of this section.

(1) If you elect to monitor your heat exchange system by using the monitoring method specified in paragraph (a)(3)(i) of this section, then the leak action level is a total strippable volatile organic compounds concentration (as methane) in the stripping gas of 3.9 parts per million by volume.

(2) If you elect to monitor your heat exchange system by using the monitoring method specified in paragraph (a)(3)(ii) of this section, then the leak action level is a total strippable volatile organic compounds concentration in the cooling water of 50 parts per billion by weight.

(3) If you elect to monitor your heat exchange system by using the monitoring method specified in paragraph (a)(3)(iii) of this section, then the leak action level is a vinyl chloride concentration in the cooling water of 50 parts per billion by weight.

(d) A leak is defined as specified in paragraph (d)(1) or (2) of this section, as applicable.

(1) For once-through heat exchange systems for which you monitor the inlet water feed, as described in paragraph (a)(2)(ii) of this section, a leak is detected if the difference in the measurement value of the sample taken from a location specified in paragraph (a)(2)(i) of this section and the measurement value of the corresponding sample taken from the location specified in paragraph (a)(2)(ii) of this section equals or exceeds the leak action level.

(2) For all other heat exchange systems, a leak is detected if a measurement value taken according to the requirements in paragraph (a) of this section equals or exceeds the leak action level.

(e) If a leak is detected, you must repair the leak to reduce the measured concentration to below the applicable action level as soon as practicable, but no later than 45 days after identifying the leak, except as specified in paragraphs (f) and (g) of this section. Repair includes re-monitoring as specified in paragraph (a) of this section to verify that the measured concentration is below the applicable action level.

Actions that you can take to achieve repair include but are not limited to:

(1) Physical modifications to the leaking heat exchanger, such as welding the leak or replacing a tube;

(2) Blocking the leaking tube within the heat exchanger;

(3) Changing the pressure so that water flows into the process fluid;

(4) Replacing the heat exchanger or heat exchanger bundle; or

(5) Isolating, bypassing or otherwise removing the leaking heat exchanger from service until it is otherwise repaired.

(f) If you detect a leak when monitoring a cooling tower return line or heat exchanger exit line under paragraph (a) of this section, you may conduct additional monitoring following the requirements in paragraph (a) of this section to further isolate each heat exchanger or group of heat exchangers in HAP service within the heat exchange system for which the leak was detected. If you do not detect any leaks when conducting additional monitoring for each heat exchanger or group of heat exchangers, the heat exchange system is excluded from repair requirements in paragraph (e) of this section.

(g) The delay of repair action level is defined as either a total strippable volatile organic compounds concentration (as methane) in the stripping gas of 39 parts per million by volume or a total strippable volatile organic compounds concentration in the cooling water of 500 parts per billion by weight or a vinyl chloride concentration in the cooling water of 500 parts per billion by weight. While you remain below the repair action level, you may delay the repair of a leaking heat exchanger only if one of the conditions in paragraphs (g)(1) or (2) of this section is met. If you exceed the repair action level you must repair according to paragraph (e) of this section. You must determine if a delay of repair is necessary as soon as practicable, but no later than 45 days after first identifying the leak.

(1) If the repair is technically infeasible without a shutdown and the total strippable volatile organic compounds or vinyl chloride concentration is initially and remains less than the delay of repair action level for all monitoring periods during the delay of repair, you may delay repair until the next scheduled shutdown of the heat exchange system. If, during subsequent monitoring, the total strippable volatile organic compounds or vinyl chloride concentration is equal to or greater than the delay of repair action level, you must repair the leak within 30 days of the monitoring event in which the total strippable volatile organic compounds or vinyl chloride concentration was equal to or exceeded the delay of repair action level.

(2) If the necessary equipment, parts, or personnel are not available and the total strippable volatile organic compounds or vinyl chloride concentration is initially and remains less than the delay of repair action level for all monitoring periods during the delay of repair, you may delay the repair for a maximum of 120 days from the day the leak was first identified. You must demonstrate that the necessary equipment, parts or personnel were not available. If, during subsequent monthly monitoring, the total strippable volatile organic compounds or vinyl chloride concentration is equal to or greater than the delay of repair action level, you must repair the leak within 30 days of the monitoring event in which the leak was equal to or exceeded the total strippable volatile organic compounds or vinyl chloride delay of repair action level.

(h) To delay the repair under paragraph (g) of this section, you must record the information in paragraphs (h)(1) through (4) of this section.

(1) The reason(s) for delaying repair.

(2) A schedule for completing the repair as soon as practical.

(3) The date and concentration of the leak as first identified and the results of all subsequent monitoring events during the delay of repair.

(4) An estimate of the potential emissions from the leaking heat exchange system following the procedures in paragraphs (h)(4)(i) and (ii) of this section.

(i) Determine the total strippable volatile organic compounds or vinyl chloride concentration in the cooling water, in parts per billion by weight. If the Modified El Paso Method is used, calculate the total strippable volatile

organic compounds concentration in the cooling water using equation 7–1 from Modified El Paso Method (incorporated by reference, see §63.14) and the total strippable volatile organic compounds concentration measured in the stripped air.

(ii) Calculate the emissions for the leaking heat exchange system by multiplying the volatile organic compounds or vinyl chloride concentration in the cooling water, ppbw, by the flow rate of the cooling water at the selected monitoring location and by the expected duration of the delay according to Equation 1 of this section. The flow rate may be based on direct measurement, pump curves, heat balance calculations or other engineering methods.

$$E_L = (C_{VC})(10^{-9})(V_{CW})(\rho_{CW})(60)(D_{delay}) \qquad \text{(Eq. 1)}$$

Where:

E_L = Emissions from leaking heat exchange system, pounds of volatile organic compounds or vinyl chloride.

C_{VC} = Actual measured concentration of total strippable volatile organic compounds or vinyl chloride measured in the cooling water, parts per billion by weight (ppbw).

V_{CW} = Total volumetric flow rate of cooling water, gallons per minute (gpm).

ρ_{CW} = Density of cooling water, pounds per gallon (lb/gal).

D_{delay} = Expected duration of the repair delay, days.

§63.11925 What are my initial and continuous compliance requirements for process vents?

Each process vent must meet the requirements of paragraphs (a) through (h) of this section.

(a) *Emission limits.* Each process vent must meet the emission limits in Table 1 or 2 to this subpart prior to the vent stream being exposed to the atmosphere. The emission limits in Table 1 or 2 to this subpart apply at all times. The emission limits in Table 1 or 2 to this subpart must not be met through dilution.

(b) *Closed vent systems and control devices.* Each batch process vent, continuous process vent and miscellaneous vent that is in HAP service must be routed through a closed vent system to a control device. All gas streams routed to the closed vent system and control device must be for a process purpose and not for the purpose of diluting the process vent to meet the emission limits in Table 1 or 2 to this subpart. Each control device used to comply with paragraph (a) of this section must meet the requirements of §§63.11925 and 63.11940, and all closed vent systems must meet the requirements in §63.11930. You must not use a flare to comply with the emission limits in Table 1 or 2 to this subpart.

(c) *General monitoring requirements.* Except as provided in paragraphs (c)(1) through (3) of this section, for each control device used to comply with the process vent emission limit specified in Table 1 or 2 to this subpart, you must install and operate a continuous parameter monitoring system (CPMS) to monitor each operating parameter specified in §63.11940(a) through (h) to comply with your operating limit(s) required in §63.11880(b).

(1) Hydrogen chloride continuous emission monitoring system (CEMS). In lieu of establishing operating limits in §63.11880(b) and using CPMS to comply with the operating limits, as specified in §63.11940(a) through (h), upon promulgation of a performance specification for hydrogen chloride CEMS, new and existing sources have the option to install a hydrogen chloride CEMS to demonstrate initial and continuous compliance with the hydrogen chloride emission limit for process vents, as specified in paragraphs (d) and (e) of this section.

(2) Dioxin/furan CEMS. In lieu of establishing operating limits in §63.11880(b) and using CPMS to comply with the operating limits as specified in §63.11940(a) through (h), upon promulgation of a performance specification for dioxin/furan CEMS, new and