

percent by weight of total HAP listed in Table 1 to this subpart.

HEAT EXCHANGE SYSTEM REQUIREMENTS

§ 63.1085 What are the general requirements for heat exchange systems?

Unless you meet one of the requirements for exemptions in § 63.1084, you must meet the requirements in paragraphs (a) through (d) of this section.

(a) Monitor the cooling water for the presence of substances that indicate a leak according to § 63.1086.

(b) If you detect a leak, repair it according to § 63.1087 unless repair is delayed according to § 63.1088.

(c) Keep the records specified in § 63.1089.

(d) Submit the reports specified in § 63.1090.

MONITORING REQUIREMENTS FOR HEAT EXCHANGE SYSTEMS

§ 63.1086 How must I monitor for leaks to cooling water?

You must monitor for leaks to cooling water by monitoring each heat exchange system according to the requirements of paragraph (a) of this section, monitoring each heat exchanger according to the requirements of paragraph (b) of this section, or monitoring a surrogate parameter according to the requirements of paragraph (c) of this section. If you elect to comply with the requirements of paragraph (a) or (b) of this section, you may use alternatives in paragraph (d)(1) or (2) of this section for determining the mean entrance concentration.

(a) *Heat exchange system.* Monitor cooling water in each heat exchange system for the HAP listed in Table 1 to this subpart (either total or speciated) or other representative substances (e.g., total organic carbon or volatile organic compounds (VOC)) that indicate the presence of a leak according to the requirements in paragraphs (a)(1) through (5) of this section.

(1) You define the equipment that comprises each heat exchange system. For the purposes of implementing paragraph (a) of this section, a heat exchange system may consist of an entire heat exchange system or any combinations of heat exchangers such that, based on the rate of cooling water at

the entrance and exit to each heat exchange system and the sensitivity of the test method being used, a leak of 3.06 kg/hr or greater of the HAP in Table 1 to this subpart would be detected. For example, if the test you decide to use has a sensitivity of 1 ppmv for total HAP, you must define the heat exchange system so that the cooling water flow rate is 51,031 liters per minute or less so that a leak of 3.06 kg/hr can be detected.

(2) Monitoring periods. For existing sources, monitor cooling water as specified in paragraph (a)(2)(i) of this section. Monitor heat exchange systems at new sources according to the specifications in paragraph (a)(2)(ii) of this section.

(i) Monitor monthly for 6 months, both initially and following completion of a leak repair. Then monitor as provided in either paragraph (a)(2)(i)(A) or (a)(2)(i)(B) of this section, as appropriate.

(A) If no leaks are detected by monitoring monthly for a 6-month period, monitor quarterly thereafter until a leak is detected.

(B) If a leak is detected, monitor monthly until the leak has been repaired. Upon completion of repair, monitor according to the specifications in paragraph (a)(2)(i) of this section.

(ii) Monitor weekly for 6 months, both initially and following completion of a leak repair. Then monitor as provided in paragraph (a)(2)(ii)(A) or (B) of this section, as appropriate.

(A) If no leaks are detected by monitoring weekly for a 6-month period, monitor monthly thereafter until a leak is detected.

(B) If a leak is detected, monitor weekly until the leak has been repaired. Upon completion of the repair, monitor according to the specifications in paragraph (a)(2)(ii) of this section.

(3) Determine the concentration of the monitored substance in the heat exchange system cooling water using any method listed in 40 CFR part 136. Use the same method for both entrance and exit samples. You may validate 40 CFR part 136 methods for the HAP listed in Table 1 to this subpart according to the procedures in appendix D to this part. Alternative methods may be used upon approval by the Administrator.

(4) Take a minimum of three sets of samples at each entrance and exit.

(5) Calculate the average entrance and exit concentrations, correcting for the addition of make-up water and evaporative losses, if applicable. Using a one-sided statistical procedure at the 0.05 level of significance, if the exit mean concentration is at least 10 percent greater than the entrance mean of the HAP (total or speciated) in Table 1 to this subpart or other representative substance, and the leak is at least 3.06 kg/hr, you have detected a leak.

(b) *Individual heat exchangers.* Monitor the cooling water at the entrance and exit of each heat exchanger for the HAP in Table 1 to this subpart (either total or speciated) or other representative substances (e.g., total organic carbon or VOC) that indicate the presence of a leak in a heat exchanger according to the requirements in paragraphs (b)(1) through (4) of this section.

(1) Monitoring periods. For existing sources, monitor cooling water as specified in paragraph (b)(1)(i) of this section. Monitor each heat exchanger at new sources according to the specifications in paragraph (b)(1)(ii) of this section.

(i) Monitor monthly for 6 months, both initially and following completion of a leak repair. Then monitor as provided in paragraph (b)(1)(i)(A) or (b)(1)(i)(B) of this section, as appropriate.

(A) If no leaks are detected by monitoring monthly for a 6-month period, monitor quarterly thereafter until a leak is detected.

(B) If a leak is detected, monitor monthly until the leak has been repaired. Upon completion of repair, monitor according to the specifications in paragraph (b)(1)(i) of this section.

(ii) Monitor weekly for 6 months, both initially and following completion of a leak repair. Then monitor as provided in paragraph (b)(1)(ii)(A) or (B) of this section, as appropriate.

(A) If no leaks are detected by monitoring weekly for a 6-month period, monitor monthly thereafter until a leak is detected.

(B) If a leak is detected, monitor weekly until the leak has been repaired. Upon completion of the repair,

monitor according to the specifications in paragraph (b)(1)(ii) of this section.

(2) Determine the concentration of the monitored substance in the cooling water using any method listed in 40 CFR part 136, as long as the method is sensitive to concentrations as low as 10 ppmv. Use the same method for both entrance and exit samples. Validation of 40 CFR part 136 methods for the HAP listed in Table 1 to this subpart may be determined according to the provisions of appendix D to this part. Alternative methods may be used upon approval by the Administrator.

(3) Take a minimum of three sets of samples at each heat exchanger entrance and exit.

(4) Calculate the average entrance and exit concentrations, correcting for the addition of make-up water and evaporative losses, if applicable. Using a one-sided statistical procedure at the 0.05 level of significance, if the exit mean concentration is at least 1 ppmw or 10 percent greater than the entrance mean, whichever is greater, you have detected a leak.

(c) *Surrogate parameters.* You may elect to comply with the requirements of this section by monitoring using a surrogate indicator of leaks, provided that you comply with the requirements of paragraphs (c)(1) through (3) of this section. Surrogate indicators that could be used to develop an acceptable monitoring program are ion specific electrode monitoring, pH, conductivity, or other representative indicators.

(1) You shall prepare and implement a monitoring plan that documents the procedures that will be used to detect leaks of process fluids into cooling waters. The plan shall require monitoring of one or more process parameters or other conditions that indicate a leak. Monitoring that is already being conducted for other purposes may be used to satisfy the requirements of this section. The plan shall include the information specified in paragraphs (c)(1)(i) through (iv) of this section.

(i) A description of the parameter or condition to be monitored and an explanation of how the selected parameter or condition will reliably indicate the presence of a leak.

(ii) The parameter level(s) or condition(s) that shall constitute a leak. This shall be documented by data or calculations showing that the selected levels or conditions will reliably identify leaks. The monitoring must be sufficiently sensitive to determine the range of parameter levels or conditions when the system is not leaking. When the selected parameter level or condition is outside that range, you have detected a leak.

(iii) Monitoring periods. For existing sources, monitor cooling water as specified in paragraph (c)(1)(iii)(A) of this section. Monitor heat exchange systems at new sources according to the specifications in paragraph (c)(1)(iii)(B) of this section.

(A) Monitor monthly for 6 months, both initially and following completion of a leak repair. Then monitor as provided in paragraph (c)(1)(iii)(A)(1) or (c)(1)(iii)(A)(2) of this section, as appropriate.

(1) If no leaks are detected, monitor quarterly thereafter until a leak is detected.

(2) If a leak is detected, monitor monthly until the leak has been repaired. Upon completion of repair, monitor according to the specifications in paragraph (c)(1)(iii)(A) of this section.

(B) Monitor the cooling water weekly for heat exchange systems at new sources.

(iv) The records that will be maintained to document compliance with the requirements of this section.

(2) If a leak is identified by audio, visual, or olfactory inspection, a method listed in 40 CFR part 136, or any other means other than those described in the monitoring plan, and the method(s) specified in the plan could not detect the leak, you shall revise the plan and document the basis for the changes. You shall complete the revisions to the plan no later than 180 days after discovery of the leak.

(3) You shall maintain, at all times, the monitoring plan that is currently in use. The current plan shall be maintained on-site, or shall be accessible from a central location by computer or other means that provide access within 2 hours after a request. If the monitoring plan is changed, you must retain

the most recent superseded plan for at least 5 years from the date of its creation. The superseded plan shall be retained on-site or accessible from a central location by computer or other means that provide access within 2 hours after a request.

(d) *Simplifying assumptions for entrance mean concentration.* If you are complying with paragraph (a) or (b) of this section, you may elect to determine the entrance mean concentration as specified in paragraph (d)(1) or (2) of this section.

(1) Assume that the entrance mean concentration of the monitored substance is zero; or,

(2) Determine the entrance mean concentration of a monitored substance at a sampling location anywhere upstream of the heat exchanger or heat exchange system, provided that there is not a reasonable opportunity for the concentration to change at the entrance to each heat exchanger or heat exchange system.

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REPAIR REQUIREMENTS FOR HEAT EXCHANGE SYSTEMS

§ 63.1087 What actions must I take if a leak is detected?

If a leak is detected, you must comply with the requirements in paragraphs (a) and (b) of this section unless repair is delayed according to § 63.1088.

(a) Repair the leak as soon as practical but not later than 45 calendar days after you received the results of monitoring tests that indicated a leak. You must repair the leak unless you demonstrate that the results are due to a condition other than a leak.

(b) Once the leak has been repaired, use the monitoring requirements in § 63.1086 within 7 calendar days of the repair or startup, whichever is later, to confirm that the heat exchange system has been repaired.

§ 63.1088 In what situations may I delay leak repair, and what actions must I take for delay of repair?

You may delay the repair of heat exchange systems if the leaking equipment is isolated from the process. You