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.

\[
E_L = (C_{VC} \times 10^{-9}) \times V_{CW} \times \rho_{CW} \times 60 \times D_{delay}
\]

( 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).
- \(\rho_{CW}\) = 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
existing sources have the option to install a dioxin/furan CEMS to demonstrate initial and continuous compliance with the dioxins/furan emission limit for process vents, as specified in paragraphs (d) and (e) of this section.

(3) Total hydrocarbon 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), new and existing affected sources have the option to install a total hydrocarbon CEMS to demonstrate initial and continuous compliance with the total hydrocarbons or total organic HAP emission limit for process vents, as specified in paragraphs (d) and (e) of this section.

(d) Initial compliance. To demonstrate initial compliance with the emission limits in Table 1 or 2 to this subpart, you must comply with paragraphs (d)(1) through (5) of this section.

(1) You must conduct an initial inspection as specified in §63.11930(d) for each closed vent system.

(2) For each CEMS and CPMS required or that you elect to use as specified in paragraph (c) of this section, you must prepare the quality control program and site-specific performance evaluation test plan as specified in §63.11935(b) and site-specific monitoring plan specified in §63.11935(c), respectively.

(3) For each CEMS and CPMS required or that you elect to use as specified in paragraph (c) of this section, you must install, operate, and maintain the CEMS and CPMS as specified in §§63.11935(b) and (c), respectively, and you must conduct an initial site-specific performance evaluation test according to your site-specific monitoring plan and §§63.11935(b)(3) and (c)(4), respectively.

(4) For each emission limit for which you use a CEMS to demonstrate compliance, you must meet the requirements specified in §63.11890(c), and you must demonstrate initial compliance with the emission limits in Table 1 or 2 to this subpart based on 3-hour block averages of CEMS data collected at the minimum frequency specified in §63.11935(b)(2) and calculated using the data reduction method specified in §63.11935(e). For a CEMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the 3-hour averaging period.

(5) For each emission limit in Table 1 or 2 for which you do not use a CEMS to demonstrate compliance, you must meet the requirements of paragraphs (d)(5)(i) and (ii) of this section.

(i) You must conduct an initial performance test according to the requirements in §63.11945 to demonstrate compliance with the total hydrocarbons or total organic HAP emission limit, vinyl chloride emission limit, hydrogen chloride emission limit, and dioxin/furan emission limit in Table 1 or 2 to this subpart.

(ii) During the performance test specified in paragraph (d)(5)(i) of this section, for each CPMS installed and operated as specified in paragraph (c) of this section, you must establish an operating limit as the parameter range, minimum operating parameter level, or maximum operating parameter level specified in §63.11935(d). You must meet the requirements specified in §63.11890(c). Each operating limit must be based on the data averaging period for compliance specified in Table 5 to this subpart using data collected at the minimum frequency specified in §63.11935(c)(2) and calculated using the data reduction method specified in §63.11935(e). For a CPMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the averaging period specified in Table 5 to this subpart.

(e) Continuous compliance. To demonstrate continuous compliance with the emission limits in Table 1 or 2 to this subpart for each process vent, you must comply with paragraphs (e)(1) through (5) of this section.

(1) You must meet the requirements in §63.11930 for each closed vent system.

(2) You must operate and maintain each CEMS and CPMS required in paragraph (c) of this section as specified in §63.11935(b) and (c), respectively.

(3) For each emission limit for which you use a CEMS to demonstrate compliance, you must meet the requirements in paragraphs (e)(3)(i) and (ii) of this section.
(i) You must conduct a periodic site-specific CEMS performance evaluation test according to your quality control program and site-specific performance evaluation test plan specified in §63.11935(b)(1).

(ii) You must demonstrate continuous compliance with the emission limits in Table 1 or 2 to this subpart based on 3-hour block averages of CEMS data collected at the minimum frequency specified in §63.11935(b)(2), and calculated using the data reduction method specified in §63.11935(e). You must meet the requirements specified in §63.11890(c). For a CEMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the 3-hour averaging period.

(iii) For each emission limit for which you do not use a CEMS to demonstrate compliance, you must meet the requirements of paragraphs (e)(4)(i) and (ii) of this section.

(iv) You must conduct a performance test once every 5 years according to the requirements in §63.11945 for each pollutant in Table 1 or 2 to this subpart.

(v) For each CPMS operated and maintained as specified in paragraph (e)(2) of this section, you must meet the requirements specified in paragraphs (e)(4)(ii)(A) through (C) of this section.

(A) You must conduct periodic site-specific CPMS performance evaluation tests according to your site-specific monitoring plan and §63.11935(c).

(B) For each control device being monitored, you must continuously collect CPMS data consistent with §63.11980(c) and your site-specific monitoring plan. You must continuously determine the average value of each monitored operating parameter based on the data collection and reduction methods specified in §§63.11935(c)(2) and 63.11935(e), and the applicable data averaging period for compliance specified in Table 5 to this subpart for all periods the process is operating. For a CPMS used on a batch operation, you may use a data averaging period based on an operating block in lieu of the averaging periods specified in Table 5 to this subpart.

(C) You must demonstrate continuous compliance with each operating limit established in paragraph (d)(5)(ii) of this section using these average values calculated in paragraph (e)(4)(ii)(B) of this section.

(vi) Each closed vent system and control device used to comply with an emission limit in Table 1 or 2 to this subpart must be operated at all times when emissions are vented to, or collected by, these systems or devices.

(vii) To demonstrate compliance with the dioxin/furan toxic equivalency emission limit specified in Table 1 or 2 to this subpart, you must determine dioxin/furan toxic equivalency as specified in paragraphs (f)(1) through (3) of this section.

(1) Measure the concentration of each dioxin/furan (tetra-through octachlorinated) congener emitted using Method 23 at 40 CFR part 60, appendix A–7.

(2) For each dioxin/furan (tetra-through octachlorinated) congener measured in accordance with paragraph (f)(1) of this section, multiply the congener concentration by its corresponding toxic equivalency factor specified in Table 6 to this subpart.

(3) Sum the products calculated in accordance with paragraph (f)(2) of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.

(g) Emission profile. You must characterize each process vent by developing an emissions profile for each contributing continuous process vent, miscellaneous vent and batch process vent according to paragraphs (g)(1) through (3) of this section.

(1) For batch process vents, the emissions profile must:

(i) Describe the characteristics of the batch process vent under worst-case conditions.

(ii) Determine emissions per episode and batch process vent emissions according to the procedures specified in §63.11950.

(2) For continuous process vents, the flow rate and concentration must be determined according to paragraphs (g)(2)(i) through (iii) or according to paragraph (g)(2)(iv):

(i) Method 1 or 1A of 40 CFR part 60, appendix A–1, as appropriate, shall
be used for selection of the sampling site. The sampling site shall be after the last recovery device (if any recovery devices are present) but prior to being combined with any other continuous process vent, batch process vent, or miscellaneous vent, prior to the inlet of any control device that is present and prior to release to the atmosphere.

(B) No traverse site selection method is needed for vents smaller than 0.10 meter in diameter.

(ii) The gas volumetric flow rate shall be determined using Method 2, 2A, 2C or 2D of 40 CFR part 60, appendix A–1, as appropriate.

(iii) (A) Method 18 of 40 CFR part 60, appendix A–6 or Method 25A of 40 CFR part 60, appendix A–7 shall be used to measure concentration; alternatively, any other method or data that has been validated according to the protocol in Method 301 of appendix A of this part may be used.

(B) Where Method 18 of 40 CFR part 60, appendix A–6 is used, the following procedures shall be used to calculate parts per million by volume concentration:

(1) The minimum sampling time for each run shall be 1 hour in which either an integrated sample or four grab samples shall be taken. If grab sampling is used, then the samples shall be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(2) The concentration of either total organic compounds (TOC) (minus methane and ethane) or organic HAP shall be calculated according to paragraph (g)(2)(iii)(B)(2)(i) or (g)(2)(iii)(B)(2)(ii) of this section as applicable.

(i) The TOC concentration ($C_{TOC}$) is the sum of the concentrations of the individual components and shall be computed for each run using Equation 1 of this section:

\[
C_{TOC} = \frac{\sum_{i=1}^{x} \left( \sum_{j=1}^{n} C_{ij} \right)}{x}
\]  

(Eq. 1)

Where:

$C_{TOC}$ = Concentration of TOC (minus methane and ethane), dry basis, parts per million by volume.

$C_{ij}$ = Concentration of sample component $j$ of the sample $i$, dry basis, parts per million by volume.

$n$ = Number of components in the sample.

$x$ = Number of samples in the sample run.

(ii) The total organic HAP concentration (CHAP) shall be computed according to Equation 1 of this section except that only the organic HAP species shall be summed. The list of organic HAP is provided in Table 2 to subpart F of this part.

(C) Where Method 25A of 40 CFR part 60, appendix A–7 is used, the following procedures shall be used to calculate parts per million by volume TOC concentration:

(1) Method 25A of 40 CFR part 60, appendix A–7, shall be used only if a single organic HAP compound is greater than 50 percent of total organic HAP, by volume, in the vent stream.

(2) The vent stream composition may be determined by either process knowledge, test data collected using an appropriate EPA method, or a method or data validated according to the protocol in Method 301 of appendix A of this part. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current vent stream conditions.

(3) The organic HAP used as the calibration gas for Method 25A of 40 CFR part 60, appendix A–7 shall be the single organic HAP compound present at greater than 50 percent of the total organic HAP by volume.
(4) The span value for Method 25A of 40 CFR part 60, appendix A–7 shall be 50 parts per million by volume.

(5) Use of Method 25A of 40 CFR part 60, appendix A–7 is acceptable if the response from the high-level calibration gas is at least 20 times the standard deviation of the response from the zero calibration gas when the instrument is zeroed on the most sensitive scale.

(iv) Engineering assessment including, but not limited to, the following:

(A) Previous test results provided the tests are representative of current operating practices at the process unit.

(B) Bench-scale or pilot-scale test data representative of the process under representative operating conditions.

(C) Maximum flow rate, TOC emission rate, organic HAP emission rate, or net heating value limit specified or implied within a permit limit applicable to the process vent.

(D) Design analysis based on accepted chemical engineering principles, measurable process parameters, or physical or chemical laws or properties. Examples of analytical methods include, but are not limited to:

(1) Use of material balances based on process stoichiometry to estimate maximum organic HAP concentrations,

(2) Estimation of maximum flow rate based on physical equipment design such as pump or blower capacities,

(3) Estimation of TOC or organic HAP concentrations based on saturation conditions,

(4) Estimation of maximum expected net heating value based on the vent stream concentration of each organic compound or, alternatively, as if all TOC in the vent stream were the compound with the highest heating value.

(E) All data, assumptions, and procedures used in the engineering assessment shall be documented.

(3) For miscellaneous process vents the emissions profile must be determined according to paragraph (g)(2)(iv) of this section.

(h) Process changes. Except for temporary shutdowns for maintenance activities, if you make a process change such that, as a result of that change, you are subject to a different process vent limit in Table 1 or 2 to this subpart, then you must meet the requirements of §63.11896.

§ 63.11930 What requirements must I meet for closed vent systems?

(a) General. To route emissions from process vents subject to the emission limits in Table 1 or 2 to this subpart to a control device, you must use a closed vent system and meet the requirements of this section and all provisions referenced in this section. However, if you operate and maintain your closed vent system in vacuum service as defined in §63.12005, you must meet the requirements in paragraph (h) of this section and are not required to meet the requirements in paragraphs (a) through (g) of this section.

(b) Collection of emissions. Each closed vent system must be designed and operated to collect the HAP vapors from each continuous process vent, miscellaneous process vent and batch process vent, and to route the collected vapors to a control device.

(c) Bypass. For each closed vent system that contains a bypass as defined in §63.12005 (e.g., diverting a vent stream away from the control device), you must not discharge to the atmosphere through the bypass. Any such release constitutes a violation of this rule. The use of any bypass diverted to the atmosphere during a performance test invalidates the performance test. You must comply with the provisions of either paragraph (c)(1) or (2) of this section for each closed vent system that contains a bypass that could divert a vent stream to the atmosphere.

(1) Bypass flow indicator. Install, maintain, and operate a flow indicator as specified in paragraphs (c)(1)(i) through (iv) of this section.

(i) The flow indicator must be properly installed at the entrance to any bypass.

(ii) The flow indicator must be equipped with an alarm system that will alert an operator immediately, and automatically when flow is detected in the bypass. The alarm must be located such that the alert is detected and recognized easily by an operator.

(iii) If the alarm is triggered, you must immediately initiate procedures to identify the cause of the alarm. If