meeting the outlet concentration limits in table 1 to this subpart without the use of a control device, all applicable performance tests must also be conducted whenever process changes are made that could reasonably be expected to increase the outlet concentration. Examples of process changes include, but are not limited to, changes in production capacity, production rate, feedstock type, or catalyst type, or whenever there is replacement, removal, or addition of recovery equipment. For purposes of this paragraph, process changes do not include: process upsets and unintentional, temporary process changes.

(b) You must report the results of subsequent performance tests within 60 days after the completion of the test. This report should also verify that the operating limits for your affected source have not changed or provide documentation of revised operating limits established as specified in Table 2 to this subpart. The reports for all subsequent performance tests should include all applicable information required in § 63.9050.

[68 FR 19090, Apr. 17, 2003, as amended at 71 FR 17745, Apr. 7, 2006]

§ 63.9020 What performance tests and other procedures must I use?

(a) You must conduct each performance test in Table 3 to this subpart that applies to you as directed in paragraphs (a)(1) through (4) of this section, except as noted in paragraphs (b) and (c) of this section.

(1) You must develop a site-specific test plan according to § 63.7(c)(2) and conduct each performance test according to the site-specific test plan.

(2) You must conduct each performance test under representative conditions according to the requirements in § 63.7(e)(1) and under the specific conditions that this subpart specifies in Table 3.

(3) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in § 63.7(e)(1).

(4) You must conduct at least three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour.

(b) If you are complying with a percent reduction emission limitation, you must determine the percent reduction in accordance with paragraphs (b)(1) and (2) of this section.

(1) Calculate the mass rate of either HCl or chlorine using Equations 1 and 2 of this section:

$$E_i = K_2(C_i M_i)Q_i \qquad \text{Equation 1}$$

$$E_o = K_2(C_o M_o)Q_o \qquad \text{Equation 2}$$

where:

C_i, C_o = Concentration of HCl or Cl_2 in the gas stream at the inlet and outlet of the control device(s), respectively, dry basis, parts per million by volume.

E_i, E_o = Mass rate of HCl or Cl_2 at the inlet and outlet of the control device(s), respectively, dry basis, kilogram per hour.

M_i, M_o = Molecular weight of HCl or Cl_2 at the inlet and outlet of the control device(s), respectively, gram/gram-mole.

Q_i, Q_o = Flow rate of gas stream at the inlet and outlet of the control device(s), respectively, dry standard cubic meter per minute.

K_2 = Constant, 2.494×10^{-6} (parts per million)^{M1} (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20 °C.

(2) Calculate the percent reduction of HCl or Cl_2 using Equation 3 of this section:

$$R = \frac{E_i - E_o}{E_i}(100) \qquad \text{Equation 3}$$

where:

R = Control efficiency of control device(s).

E_i = Mass rate of HCl or Cl_2 to the inlet to the control device(s), kilograms per hour.

E_o = Mass rate of HCl or Cl_2 at the outlet of the control device(s), kilograms per hour.

(c) You may prepare a design evaluation in lieu of conducting a performance test for HCl storage tanks and HCl transfer operations that are not routed to a control device that also controls HCl process vent emissions or any other continuous vent stream. The design evaluation shall include documentation demonstrating that the control technique being used achieves the required control efficiency when a liquid HCl product with a concentration of 30 weight percent or greater is being loaded into the storage tank, or a tank truck, rail car, ship, or barge.

(1) If you use a caustic scrubber control device or a water scrubber control device, the design evaluation shall address the vent stream composition, constituent concentrations, liquid-to-vapor ratio, scrubbing liquid flow rate and concentration, temperature, and the reaction kinetics of the constituents with the scrubbing liquid. The design evaluation shall establish the design exhaust vent concentration level and shall include the additional information in paragraphs (c)(1)(i) and (ii) of this section for trays and a packed column scrubber.

(i) Type and total number of theoretical and actual trays.

(ii) Type and total surface area of packing for entire column and for individual packed sections, if the column contains more than one packed section.

(2) If you use any other control device, the design evaluation shall address the composition and HAP concentration of the vent stream immediately preceding the control device, as well as other parameters necessary to demonstrate that the control technique being used achieves the required control efficiency when a liquid HCl product with a concentration of 30 weight percent or greater is being loaded into the storage tank, or a tank truck, rail car, ship, or barge.

(d) You are not required to conduct a performance test for an emission point for which a performance test was conducted within the previous 5-year period, using the same test methods specified in this section and for which either no deliberate process changes have been made since the test, or the owner or operator can demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process changes. The operating limits reported under the previous performance test shall be sufficient to meet the monitoring requirements in this subpart.

(e) You must establish all operating limits with which you will demonstrate continuous compliance with the applicable emission limits in Table 1 to this subpart as described in paragraphs (e)(1) through (3) of this section.

(1) If you use a caustic scrubber control device or water scrubber control device and you conduct a performance test, you must establish operating limits according to paragraphs (e)(1)(i) and (ii) of this section. If a series of control devices are used, you must establish separate operating limits for each device.

(i) You must establish the minimum value as the operating limit for scrubber inlet liquid or recirculating liquid flow rate, as appropriate. The minimum value shall be based on the scrubber inlet liquid or recirculating liquid flow rate, as appropriate, values measured during the performance test.

(ii) You must establish the minimum and maximum values as the operating limits for scrubber effluent pH. The minimum and maximum values shall be based on the scrubber effluent pH values measured during the performance test.

(2) If you use any other control device and you conduct a performance test, you must establish operating limits according to your site-specific test plan submitted in accordance with § 63.7(c)(2)(i). The operating limits shall be based on the operating parameter values measured during the performance test. If a series of control devices are used, you must establish separate operating limits for each device.

(3) If you do not conduct a performance test for a HCl storage tank or HCl transfer operation, you must use engineering assessments and/or manufacturer's recommendations to establish the operating limits specified in paragraphs (e)(1)(i) and (ii), or (e)(2), of this section.

(4) As needed in applicability determinations, you must use ASTM E224 to determine the HCl concentration in liquid products.

§ 63.9025 What are my monitoring installation, operation, and maintenance requirements?

(a) For each operating parameter that you are required by § 63.9020(e) to monitor, you must install, operate, and maintain each CMS according to the requirements in paragraphs (a)(1) through (6) of this section.

(1) You must operate your CMS and collect data at all times the process is operating.