Administrator for a minimum of 2 years.

[52 FR 8727, Mar. 19, 1987, as amended at 65 FR 62151, Oct. 17, 2000]

§61.56 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: Sections 61.53(c)(4) and 61.55(d). The authorities not delegated to States listed are in addition to the authorities in the General Provisions, subpart A of 40 CFR part 61, that will not be delegated to States (§§61.04(b), 61.12(d)(1), and 61.13(h)(1)(ii)).

[52 FR 8728, Mar. 19, 1987]

Subpart F—National Emission Standard for Vinyl Chloride

SOURCE: 41 FR 46564, Oct. 21, 1976, unless otherwise noted.

§61.60 Applicability.

(a) This subpart applies to plants which produce:

(1) Ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene,

(2) Vinyl chloride by any process, and/or

(3) One or more polymers containing any fraction of polymerized vinyl chloride.

(b) This subpart does not apply to equipment used in research and development if the reactor used to polymerize the vinyl chloride processed in the equipment has a capacity of no more than 0.19 m^3 (50 gal).

(c) Sections of this subpart other than §§61.61; 61.64 (a)(1), (b), (c), and (d); 61.67; 61.68; 61.69; 61.70; and 61.71 do not apply to equipment used in research and development if the reactor used to polymerize the vinyl chloride processed in the equipment has a capacity of greater than 0.19 m^3(50 gal) and no more than 4.17 m^3(1100 gal).

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29006, June 7, 1977; 53 FR 36972, Sept. 23, 1988; 57 FR 60999, Dec. 23, 1992]

§61.61 Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this section as follows:

(a) *Ethylene dichloride plant* includes any plant which produces ethylene dichloride by reaction of oxygen and hydrogen chloride with ethylene.

(b) *Vinyl chloride plant* includes any plant which produces vinyl chloride by any process.

(c) *Polyvinyl chloride (PVC) plant* includes any plant where vinyl chloride alone or in combination with other materials is polymerized.

(d) *Slip gauge* means a gauge which has a probe that moves through the gas/liquid interface in a storage or transfer vessel and indicates the level of vinyl chloride in the vessel by the physical state of the material the gauge discharges.

(e) *Type of resin* means the broad classification of resin referring to the basic manufacturing process for producing that resin, including, but not limited to, the suspension, dispersion, latex, bulk, and solution processes.

(f) *Grade of resin* means the subdivision of resin classification which describes it as a unique resin, i.e., the most exact description of a resin with no further subdivision.

(g) *Dispersion resin* means a resin manufactured in such a way as to form fluid dispersions when dispersed in a plasticizer or plasticizer/diluent mixtures.

(h) *Latex resin* means a resin which is produced by a polymerization process which initiates from free radical catalyst sites and is sold undried.

(i) *Bulk resin* means a resin which is produced by a polymerization process in which no water is used.

(j) *Inprocess wastewater* means any water which, during manufacturing or processing, comes into direct contact with vinyl chloride or polyvinyl chloride or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product containing vinyl chloride or polyvinyl chloride but which has not been discharged to a wastewater treatment process or discharged untreated as wastewater. Gasholder seal water is not inprocess wastewater until it is removed from the gasholder.

(k) *Wastewater treatment process* includes any process which modifies characteristics such as BOD, COD, TSS, and pH, usually for the purpose of meeting effluent guidelines and standards; it does not include any process the purpose of which is to remove vinyl chloride from water to meet requirements of this subpart.

(l) *In vinyl chloride service* means that a piece of equipment either contains or contacts a liquid that is at least 10 percent vinyl chloride by weight or a gas that is at least 10 percent by volume vinyl chloride as determined according to the provisions of § 61.67(h). The provisions of § 61.67(h) also specify how to determine that a piece of equipment is not in vinyl chloride service. For the purposes of this subpart, this definition must be used in place of the definition of ''in VHAP service'' in subpart V of this part.

(m) *Standard operating procedure* means a formal written procedure officially adopted by the plant owner or operator and available on a routine basis to those persons responsible for carrying out the procedure.

(n) *Run* means the net period of time during which an emission sample is collected.

(o) *Ethylene dichloride purification* includes any part of the process of ethylene dichloride purification following ethylene dichloride formation, but excludes crude, intermediate, and final ethylene dichloride storage tanks.

(p) *Vinyl chloride purification* incudes any part of the process of vinyl chloride production which follows vinyl chloride formation.

(q) *Reactor* includes any vessel in which vinyl chloride is partially or totally polymerized into polyvinyl chloride.

(r) *Reactor opening loss* means the emissions of vinyl chloride occurring when a reactor is vented to the atmosphere for any purpose other than an emergency relief discharge as defined in § 61.65(a).

(s) *Stripper* includes any vessel in which residual vinyl chloride is removed from polyvinyl chloride resin, except bulk resin, in the slurry form by the use of heat and/or vacuum. In the case of bulk resin, stripper includes any vessel which is used to remove residual vinyl chloride from polyvinyl chloride resin immediately following the polymerization step in the plant process flow.

(t) *Standard temperature* means a temperature of 20 °C (69 °F).

(u) *Standard pressure* means a pressure of 760 mm of Hg (29.92 in. of Hg).

(v) *Relief valve* means each pressure relief device including pressure relief valves, rupture disks and other pressure relief systems used to protect process components from overpressure conditions. ''Relief valve'' does not include polymerization shortstop systems, referigerated water systems or control valves or other devices used to control flow to an incinerator or other air pollution control device.

(w) *Leak* means any of several events that indicate interruption of confinement of vinyl chloride within process equipment. Leaks include events regulated under subpart V of this part such as:

(1) An instrument reading of 10,000 ppm or greater measured according to Method 21 (see appendix A of 40 CFR part 60);

(2) A sensor detection of failure of a seal system, failure of a barrier fluid system, or both;

(3) Detectable emissions as indicated by an instrument reading of greater than 500 ppm above background for equipment designated for no detectable emissions measured according to Method 21 (see appendix A of 40 CFR part 60); and

(4) In the case of pump seals regulated under § 61.242–2, indications of liquid dripping constituting a leak under § 61.242–2.

Leaks also include events regulated under § 61.65(b)(8)(i) for detection of ambient concentrations in excess of background concentrations. A relief valve discharge is not a leak.

(x) *Exhaust gas* means any offgas (the constituents of which may consist of any fluids, either as a liquid and/or gas) discharged directly or ultimately to the atmosphere that was initially contained in or was in direct contact with the equipment for which gas limits are prescribed in §§ 61.62(a) and (b); 61.63(a); 61.64 (a)(1), (b), (c), and (d); 61.65 (b)(1)(ii), (b)(2), (b)(3), (b)(5), (b)(6)(ii), (b)(7), and (b)(9)(ii); and 61.65(d). A leak as defined in paragraph (w) of this section is not an exhaust gas. Equipment which contains exhaust gas is subject to § 61.65(b)(8), whether or not that equipment contains 10 percent by volume vinyl chloride.

(y) *Relief valve discharge* means any nonleak discharge through a relief valve.

(z) *3-hour period* means any three consecutive 1-hour periods (each commencing on the hour), provided that the number of 3-hour periods during which the vinyl chloride concentration exceeds 10 ppm does not exceed the number of 1-hour periods during which the vinyl chloride concentration exceeds 10 ppm.

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29006, June 7, 1977; 51 FR 34908, Sept. 30, 1986; 55 FR 28348, July 10, 1990; 65 FR 62151, Oct. 17, 2000]

§ 61.62 Emission standard for ethylene dichloride plants.

(a) *Ethylene dichloride purification.* The concentration of vinyl chloride in each exhaust gas stream from any equipment used in ethylene dichloride purification is not to exceed 10 ppm (average for 3-hour period), except as provided in § 61.65(a). This requirement does not preclude combining of exhaust gas streams provided the combined steam is ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm, or equivalent as provided in § 61.66. This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in § 61.65(b)(6)(i) before being opened.

(b) *Oxychlorination reactor.* Except as provided in § 61.65(a), emissions of vinyl chloride to the atmosphere from each oxychlorination reactor are not to exceed 0.2 g/kg (0.4 lb/ton) (average for 3-hour period) of the 100 percent ethylene dichloride product from the oxychlorination process.

[51 FR 34909, Sept. 30, 1986, as amended at 65 FR 62151, Oct. 17, 2000]

§ 61.63 Emission standard for vinyl chloride plants.

An owner or operator of a vinyl chloride plant shall comply with the requirements of this section and § 61.65.

(a) Vinyl chloride formation and purification: The concentration of vinyl chloride in each exhaust gas stream from any equipment used in vinyl chloride formation and/or purification is not to exceed 10 ppm (average for 3-hour period), except as provided in § 61.65(a). This requirement does not preclude combining of exhaust gas streams provided the combined steam is ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm, or equivalent as provided in § 61.66. This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in § 61.65(b)(6)(i) before being opened.

[51 FR 34909, Sept. 30, 1986]

§ 61.64 Emission standard for polyvinyl chloride plants.

An owner or operator of a polyvinyl chloride plant shall comply with the requirements of this section and § 61.65.

(a) *Reactor.* The following requirements apply to reactors:

(1) The concentration of vinyl chloride in each exhaust gas stream from each reactor is not to exceed 10 ppm (average for 3-hour period), except as provided in paragraph (a)(2) of this section and § 61.65(a).

(2) The reactor opening loss from each reactor is not to exceed 0.02 g vinyl chloride/kg (0.04 lb vinyl chloride/ton) of polyvinyl chloride product, except as provided in paragraph (f)(1) of this section, with the product determined on a dry solids basis. This requirement does not apply to prepolymerization reactors in the bulk process. This requirement does apply to postpolymerization reactors in the bulk process, where the product means the gross product of prepolymerization and postpolymerization.

(3) Manual vent valve discharge. Except for an emergency manual vent valve discharge, there is to be no discharge to the atmosphere from any manual vent valve on a polyvinyl chloride reactor in vinyl chloride service. An emergency manual vent valve discharge means a discharge to the atmosphere which could not have been avoided by taking measures to prevent the discharge. Within 10 days of any discharge to the atmosphere from any manual vent valve, the owner or operator of the source from which the discharge occurs shall submit to the Administrator a report in writing containing information on the source, nature and cause of the discharge, the date and time of the discharge, the approximate total vinyl chloride loss during the discharge, the method used for determining the vinyl chloride loss (the calculation of the vinyl chloride loss), the action that was taken to prevent the discharge, and measures adopted to prevent future discharges.

(b) *Stripper.* The concentration of vinly chloride in each exhaust gas stream from each stripper is not to exceed 10 ppm (average for 3-hour period), except as provided in § 61.65(a). This requirement does not apply to equipment that has been opened, is out of operation, and met the requiremention § 61.65(b)(6)(i) before being opened.

(c) *Mixing, weighing, and holding containers.* The concentration of vinyl chloride in each exhaust gas stream from each mixing, weighing, or holding container in vinyl chloride service which precedes the stripper (or the reactor if the plant has no stripper) in the plant process flow is not to exceed 10 ppm (average for 3-hour period), except as provided in § 61.65(a). This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in § 61.65(b)(6)(i) before being opened.

(d) *Monomer recovery system.* The concentration of vinyl chloride in each exhaust gas stream from each monomer recovery system is not to exceed 10 ppm (average for 3-hour period), except as provided in § 61.65(a). This requirement does not apply to equipment that has been opened, is out of operation, and met the requirement in § 61.65(b)(6)(i) before being opened.

(e) *Sources following the stripper(s).* The following requirements apply to emissions of vinyl chloride to the atmosphere from the combination of all sources following the stripper(s) [or the reactor(s) if the plant has no stripper(s)] in the plant process flow including but not limited to, centrifuges, concentrators, blend tanks, filters, dryers, conveyor air discharges, baggers, storage containers, and inprocess wastewater, except as provided in paragraph (f) of this section:

(1) In polyvinyl chloride plants using stripping technology to control vinyl chloride emissions, the weighted average residual vinyl chloride concentration in all grades of polyvinyl chloride resin processed through the stripping operation on each calendar day, measured immediately after the stripping operation is completed, may not exceed:

(i) 2000 ppm for polyvinyl chloride dispersion resins, excluding latex resins;

(ii) 400 ppm for all other polyvinyl chloride resins, including latex resins, averaged separately for each type of resin; or

(2) In polyvinyl chloride plants controlling vinyl chloride emissions with technology other than stripping or in addition to stripping, emissions of vinyl chloride to the atmosphere may not exceed:

(i) 2 g/kg (4 lb/ton) product from the stripper(s) [or reactor(s) if the plant has no stripper(s)] for dispersion polyvinyl chloride resins, excluding latex resins, with the product determined on a dry solids basis;

(ii) 0.4 g/kg (0.8 lb/ton) product from the strippers [or reactor(s) if the plant has no stripper(s)] for all other polyvinyl chloride resins, including latex resins, with the product determined on a dry solids basis.

(3) The provisions of this paragraph apply at all times including when off-specification or other types of resins are made.

(f) *Reactor used as stripper.* When a nonbulk resin reactor is used as a stripper this paragraph may be applied in lieu of § 61.64 (a)(2) and (e)(1):

(1) The weighted average emissions of vinyl chloride from reactor opening

loss and all sources following the reactor used as a stripper from all grades of polyvinyl chloride resin stripped in the reactor on each calendar day may not exceed:

(i) 2.02 g/kg (0.00202 lb/lb) of polyvinyl chloride product for dispersion polyvinyl chloride resins, excluding latex resins, with the product determined on a dry solids basis.

(ii) 0.42 g/kg (0.00042 lb/lb) of polyvinyl chloride product for all other polyvinyl chloride resins, including latex resins, with the product determined on a dry solids basis.

[41 FR 46564, Oct. 21, 1976, as amended at 51 FR 34909, Sept. 30, 1986; 53 FR 36972, Sept. 23, 1988; 65 FR 62151, Oct. 17, 2000]

EDITORIAL NOTE: At 65 FR 62151, Oct. 17, 2000, § 61.64 was amended in paragraph (f)(2)(i) by revising the words ''2.02 g/kg (0.00202 lb/lb)'' to read ''2.02 g/kg (4.04 lb/ton), and in (f)(2)(ii) by revising the words ''0.42 g/kg (0.00042 lb/lb)'' to read ''0.42 g/kg (0.84 lb/ton). However, these paragraphs do not exist.

§ 61.65 Emission standard for ethylene dichloride, vinyl chloride and polyvinyl chloride plants.

An owner or operator of an ethylene dichloride, vinyl chloride, and/or polyvinyl chloride plant shall comply with the requirements of this section.

(a) *Relief valve discharge (RVD).* Except for an emergency relief discharge, and except as provided in § 61.65(d), there is to be no discharge to the atmosphere from any relief valve on any equipment in vinyl chloride service. An emergency relief discharge means a discharge which could not have been avoided by taking measures to prevent the discharge. Within 10 days of any relief valve discharge, except for those subject to § 61.65(d), the owner or operator of the source from which the relief valve discharge occurs shall submit to the Administrator a report in writing containing information on the source, nature and cause of the discharge, the date and time of the discharge, the approximate total vinyl chloride loss during the discharge, the method used for determining the vinyl chloride loss (the calculation of the vinyl chloride loss), the action that was taken to prevent the discharge, and measures adopted to prevent future discharges.

(b) *Fugitive emission sources*—(1) *Loading and unloading lines.* Vinyl chloride emissions from loading and unloading lines in vinyl chloride service which are opened to the atmosphere after each loading or unloading operation are to be minimized as follows:

(i) After each loading or unloading operation and before opening a loading or unloading line to the atmosphere, the quantity of vinyl chloride in all parts of each loading or unloading line that are to be opened to the atmosphere is to be reduced so that the parts combined contain no greater than 0.0038 m^3 (0.13 ft^3) of vinyl chloride, at standard temperature and pressure; and

(ii) Any vinyl chloride removed from a loading or unloading line in accordance with paragraph (b)(1)(i) of this section is to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm (average for 3-hour period), or equivalent as provided in § 61.66.

(2) *Slip gauges.* During loading or unloading operations, the vinyl chloride emissions from each slip gauge in vinyl chloride service are to be minimized by ducting any vinyl chloride discharged from the slip gauge through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm (average for 3-hour period), or equivalent as provided in § 61.66.

(3) Leakage from pump, compressor, and agitator seals:

(i) *Rotating pumps.* Vinyl chloride emissions from seals on all rotating pumps in vinyl chloride service are to be minimized by installing sealless pumps, pumps with double mechanical seals or equivalent as provided in § 61.66. If double mechanical seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the pump; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in § 61.66. Compliance with the provisions of 40 CFR part 61 subpart V demonstrates compliance with the provisions of this paragraph.

(ii) *Reciprocating pumps.* Vinyl chloride emissions from seals on all reciprocating pumps in vinyl chloride service are to be minimized by installing double outboard seals, or equivalent as provided in § 61.66. If double outboard seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the pump; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in § 61.66. Compliance with the provisions of 40 CFR part 61 subpart V demonstrates compliance with the provisions of this paragraph.

(iii) *Rotating compressor.* Vinyl chloride emissions from seals on all rotating compressors in vinyl chloride service are to be minimized by installing compressors with double mechanical seals, or equivalent as provided in § 61.66. If double mechanical seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the compressor; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in § 61.66. Compliance with the provisions of 40 CFR part 61 subpart V demonstrates compliance with the provisions of this paragraph.

(iv) *Reciprocating compressors.* Vinyl chloride emissions from seals on all reciprocating compressors in vinyl chloride service are to be minimized by installing double outboard seals, or equivalent as provided in § 61.66. If double outboard seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the compressor; by ducting any vinyl chloride between the two seals through a control system from which concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in § 61.66. Compliance with the provisions of 40 CFR part 61 subpart V demonstrates compliance with the provisions of this paragraph.

(v) *Agitator.* Vinyl chloride emissions from seals on all agitators in vinyl chloride service are to be minimized by installing agitators with double mechanical seals, or equivalent as provided in § 61.66. If double mechanical seals are used, vinyl chloride emissions from the seals are to be minimized by maintaining the pressure between the two seals so that any leak that occurs is into the agitated vessel; by ducting any vinyl chloride between the two seals through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in § 61.66.

(4) *Leaks from relief valves.* Vinyl chloride emissions due to leaks from each relief valve on equipment in vinyl chloride service shall comply with § 61.242–4 of subpart V of this part.

(5) *Manual venting of gases.* Except as provided in § 61.64(a)(3), all gases which are manually vented from equipment in vinly chloride service are to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm (average for 3-hour period); or equivalent as provided in § 61.66.

(6) *Opening of equipment.* Vinyl chloride emissions from opening of equipment (excluding crude, intermediate, and final EDC storage tanks, but including prepolymerization reactors used in the manufacture of bulk resins and loading or unloading lines that are not opened to the atmosphere after each loading or unloading operation) are to be minimized follows:

(i) Before opening any equipment for any reason, the quantity of vinyl chloride which is contained therein is to be reduced to an amount which occupies a volume of no more than 2.0 percent of the equipment's containment volume or 0.0950 cubic meters (25 gallons), whichever is larger, at standard temperature and pressure.

(ii) Any vinyl chloride removed from the equipment in accordance with paragraph (b)(6)(i) of this section is to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm (average for 3-hour period); or equivalent as provided in §61.66.

(7) *Samples.* Unused portions of samples containing at least 10 percent by weight vinyl chloride are to be returned to the process or destroyed in a control device from which concentration of vinyl chloride in the exhaust gas does not exceed 10 ppm (average for 3-hour period) or equivalent as provided in §61.66. Sampling techniques are to be such that sample containers in vinyl chloride service are purged into a closed process system. Compliance with the provisions of 40 CFR part 61 subpart V demonstrates compliance with the provisions of this paragraph.

(8) *Leak detection and elimination.* Vinyl chloride emissions due to leaks from equipment in vinyl chloride service are to be minimized as follows:

(i) A reliable and accurate vinyl chloride monitoring system shall be operated for detection of major leaks and identification of the general area of the plant where a leak is located. A vinyl chloride monitoring system means a device which obtains air samples from one or more points on a continuous sequential basis and analyzes the samples with gas chromatography or, if the owner or operator assumes that all hydrocarbons measured are vinyl chloride, with infrared spectrophotometry, flame ion detection, or an equivalent or alternative method. The vinyl chloride monitoring system shall be operated according to a program developed by the plant owner or operator. The owner or operator shall submit a description of the program to the Administrator within 45 days of the effective date of these regulations, unless a waiver of compliance is granted under §61.11, or the program has been approved and the Administrator does not request a review of the program. Approval of a program will be granted by the Administrator provided he finds:

(A) The location and number of points to be monitored and the frequency of monitoring provided for in the program are acceptable when they are compared with the number of pieces of equipment in vinyl chloride service and size and physical layout of the plant.

(B) It contains a definition of leak which is acceptable when compared with the background concentrations of vinyl chloride in the areas of the plant to be monitored by the vinyl chloride monitoring system. Measurements of background concentrations of vinyl chloride in the areas of the plant to be monitored by the vinyl chloride monitoring system are to be included with the description of the program. The definition of leak for a given plant may vary among the different areas within the plant and is also to change over time as background concentrations in the plant are reduced.

(C) It contains an acceptable plan of action to be taken when a leak is detected.

(D) It provides for an acceptable calibration and maintenance schedule for the vinyl chloride monitoring system and portable hydrocarbon detector. For the vinyl chloride monitoring system, a daily span check is to be conducted with a concentration of vinyl chloride equal to the concentration defined as a leak according to paragraph (b)(8)(i)(B) of this section. The calibration is to be done with either:

(*1*) A calibration gas mixture prepared from the gases specified in sections 7.2.1 and 7.2.2 of Method 106 and in accordance with section 10.1 of Method 106, or

(*2*) A calibration gas cylinder standard containing the appropriate concentration of vinyl chloride. The gas composition of the calibration gas cylinder standard is to have been certified by the manufacturer. The manufacturer must have recommended a maximum shelf life for each cylinder so that the concentration does not change greater than ±5 percent from the certified value. The date of gas cylinder preparation, certified vinyl chloride concentration, and recommended maximum shelf life must have been affixed to the cylinder before shipment from the manufacturer to the buyer. If a gas chromatograph is used as the vinyl chloride monitoring system, these gas mixtures may be directly used to prepare a chromatograph calibration curve as described in Sections 8.1 and 9.2 of Method 106. The requirements in Sections 7.2.3.1 and 7.2.3.2 of Method 106 for certification of cylinder standards and for establishment and verification of calibration standards are to be followed.

(ii) For each process unit subject to this subpart, a formal leak detection and repair program shall be implemented consistent with subpart V of this part, except as provided in paragraph (b)(8)(iii) of this section. This program is to be implemented within 90 days of the effective date of these regulations, unless a waiver of compliance is granted under § 61.11. Except as provided in paragraph (b)(8)(ii)(E) of this section, an owner or operator shall be exempt from § 61.242–1(d), § 61.242–7 (a), (b), and (c), § 61.246, and § 61.247 of subpart V of this part for any process unit in which the percentage of leaking valves is demonstrated to be less than 2.0 percent, as determined in accordance with the following:

(A) A performance test as specified in paragraph (b)(8)(ii)(B) of this section shall be conducted initially within 90 days of the effective date of these regulations, annually, and at times requested by the Administrator.

(B) For each performance test, a minimum of 200 or 90 percent, whichever is less, of the total valves in VOC service (as defined in § 60.481 of subpart VV of part 60) within the process unit shall be randomly selected and monitored within 1 week by the methods specified in § 61.245(b) of this part. If an instrument reading of 10,000 ppm or greater is measured, a leak is detected. The leak percentage shall be determined by dividing the number of valves in VOC service for which leaks are detected by the number of tested valves in VOC service.

(C) If a leak is detected, it shall be repaired in accordance with § 61.242–7 (d) and (e) of subpart V of this part.

(D) The results of the performance test shall be submitted in writing to the Administrator in the first quarterly report following the performance test as part of the reporting requirements of § 61.70.

(E) Any process unit in which the percentage of leaking valves is found to be greater than 2.0 percent according to the performance test prescribed in paragraph (b)(8)(ii)(B) of this section must comply with all provisions of subpart V of this part within 90 days.

(iii) Open-ended valves or lines located on multiple service process lines which operate in vinyl chloride service less than 10 percent of the time are exempt from the requirements of § 61.242–6 of subpart V, provided the open-ended valves or lines are addressed in the monitoring system required by paragraph (b)(8)(i) of this section. The Administrator may apply this exemption to other existing open-ended valves or lines that are demonstrated to require significant retrofit cost to comply with the requirements of § 61.242–6 of subpart V.

(9) *Inprocess wastewater.* Vinyl chloride emissions to the atmosphere from inprocess wastewater are to be reduced as follows:

(i) The concentration of vinyl chloride in each inprocess wastewater stream containing greater than 10 ppm vinyl chloride measured immediately as it leaves a piece of equipment and before being mixed with any other inprocess wastewater stream is to be reduced to no more than 10 ppm by weight before being mixed with any other inprocess wastewater stream which contains less than 10 ppm vinyl chloride; before being exposed to the atmosphere; before being discharged to a wastewater treatment process; or before being discharged untreated as a wastewater. This paragraph does apply to water which is used to displace vinyl chloride from equipment before it is opened to the atmosphere in accordance with § 61.64(a)(2) or paragraph (b)(6) of this section, but does not apply to water which is used to wash out equipment after the equipment has already been opened to the atmosphere in accordance with § 61.64(a)(2) or paragraph (b)(6) of this section.

(ii) Any vinyl chloride removed from the inprocess wastewater in accordance with paragraph (b)(9)(i) of this section is to be ducted through a control system from which the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm (average for 3-hour period); or equivalent as provided in § 61.66.

(c) The requirements in paragraphs (b)(1), (b)(2), (b)(5), (b)(6), (b)(7) and (b)(8) of this section are to be incorporated into a standard operating procedure, and made available upon request for inspection by the Administrator. The standard operating procedure is to include provisions for measuring the vinyl chloride in equipment 4.75 m^3 (1255 gal) in volume for which an emission limit is prescribed in §61.65(b)(6)(i) after opening the equipment and using Method 106, a portable hydrocarbon detector, or an alternative method. The method of measurement is to meet the requirements in §61.67(g)(5)(i)(A) or (g)(5)(i)(B).

(d) A RVD that is ducted to a control device that is continually operating while emissions from the release are present at the device is subject to the following requirements:

(1) A discharge from a control device other than a flare shall not exceed 10 ppm (average over a 3-hour period) as determined by the continuous emission monitor system required under §61.68. Such a discharge is subject to the requirements of §61.70.

(2) For a discharge routed to a flare, the flare shall comply with the requirements of §60.18.

(i) Flare operations shall be monitored in accordance with the requirements of §§60.18(d) and 60.18(f)(2). For the purposes of §60.18(d), the volume and component concentration of each relief valve discharge shall be estimated and calculation shall be made to verify ongoing compliance with the design and operating requirements of §§60.18 (c)(3) through (c)(6). If more than one relief valve is discharged simultaneously to a single flare, these calculations shall account for the cumulative effect of all such relief valve discharges. These calculations shall be made and reported quarterly for all discharges within the quarter. Failure to comply with any of the requirements of this paragraph will be a violation of §61.65(d)(2). Monitoring for the presence of a flare pilot flame shall be conducted in accordance with §60.18(f)(2). If the results of this monitoring or any other information shows that the pilot flame is not present 100 percent of the time during which a relief valve discharge is routed to the flare, the relief valve discharge is subject to the provisions of §61.65(a).

(ii) A report describing the flare design shall be provided to the Administrator not later than 90 days after the adoption of this provision or within 30 days of the installation of a flare system for control of relief valve discharge whichever is later. The flare design report shall include calculations based upon expected relief valve discharge component concentrations and net heating values (for PVC this calculation shall be based on values expected if a release occurred at the instant the polymerization starts); and estimated maximum exit velocities based upon the design throat capacity of the gas in the relief valve.

[41 FR 46564, Oct. 21, 1976; 41 FR 53017, Dec. 3, 1976, as amended at 42 FR 29006, June 7, 1977; 51 FR 34910, Sept. 30, 1986; 53 FR 36972, Sept. 23, 1988; 55 FR 28348, July 10, 1990; 65 FR 62151, Oct. 17, 2000]

§61.66 Equivalent equipment and procedures.

Upon written application from an owner or operator, the Administrator may approve use of equipment or procedures which have been demonstrated to his satisfaction to be equivalent in terms of reducing vinyl chloride emissions to the atmosphere to those prescribed for compliance with a specific paragraph of this subpart.

[51 FR 34912, Sept. 30, 1986]

§61.67 Emission tests.

(a) Unless a waiver of emission testing is obtained under §61.13, the owner or operator of a source to which this subpart applies shall test emissions from the source,

(1) Within 90 days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date, or

(2) Within 90 days of startup in the case of a new source, initial startup of which occurs after the effective date.

(b) The owner or operator shall provide the Administrator at least 30 days prior notice of an emission test to afford the Administrator the opportunity to have an observer present during the test.

(c) Any emission test is to be conducted while the equipment being tested is operating at the maximum production rate at which the equipment will be operated and under other relevant conditions as may be specified by the Administrator based on representative performance of the source.

(d) [Reserved]

(e) When at all possible, each sample is to be analyzed within 24 hours, but in no case in excess of 72 hours of sample collection. Vinyl chloride emissions are to be determined within 30 days after the emission test. The owner or operator shall report the determinations to the Administrator by a registered letter dispatched before the close of the next business day following the determination.

(f) The owner or operator shall retain at the plant and make available, upon request, for inspection by the Administrator, for a minimum of 3 years, records of emission test results and other data needed to determine emissions.

(g) Unless otherwise specified, the owner or operator shall use the test methods in appendix B to this part for each test as required by paragraphs (g)(1), (g)(2), (g)(3), (g)(4), and (g)(5) of this section, unless an alternative method has been approved by the Administrator. If the Administrator finds reasonable grounds to dispute the results obtained by an alternative method, he may require the use of a reference method. If the results of the reference and alternative methods do not agree, the results obtained by the reference method prevail, and the Administrator may notify the owner or operator that approval of the method previously considered to be alternative is withdrawn. Whenever Method 107 is specified, and the conditions in Section 1.2, ''Applicability'' of Method 107A are met, Method 107A may be used.

(1) Method 106 is to be used to determine the vinyl chloride emissions from any source for which an emission limit is prescribed in §61.62(a) or (b), §61.63(a), or §61.64(a)(1), (b), (c), or (d), or from any control system to which reactor emissions are required to be ducted in §61.64(a)(2) or to which fugitive emissions are required to be ducted in §61.65(b)(1)(ii), (b)(2), (b)(5), (b)(6)(ii), or (b)(9)(ii).

(i) For each run, one sample is to be collected. The sampling site is to be at least two stack or duct diameters downstream and one half diameter upstream from any flow disturbance such as a bend, expansion, contraction, or visible flame. For a rectangular cross section, an equivalent diameter is to be determined from the following equation:

Equivalent diameter = 2(length)(width)/(length + width)

The sampling point in the duct is to be at the centroid of the cross section. The sample is to be extracted at a rate proportional to the gas velocity at the sampling point. The sample is to contain a minimum volume of 50 liters (1.8 ft^3) corrected to standard conditions and is to be taken over a period as close to 1 hour as practicable.

(ii) Each emission test is to consist of three runs. For the purpose of determining emissions, the average of results of all runs is to apply. The average is to be computed on a time weighted basis.

(iii) For gas streams containing more that 10 percent oxygen, the concentration of vinyl chloride as determined by Method 106 is to be corrected to 10 percent oxygen (dry basis) for determination of emissions by using the following equation:

$$C_{b(corrected)} = C_b\,(10.9)/(20.9 - \text{percent } O_2)$$

Where:

$C_{b(corrected)}$ = The concentration of vinyl chloride in the exhaust gases, corrected to 10 percent oxygen.

C_b = The concentration of vinyl chloride as measured by Method 106.

20.9 = Percent oxygen in the ambient air at standard conditions.

10.9 = Percent oxygen in the ambient air at standard conditions, minus the 10.0 percent oxygen to which the correction is being made.

Percent O_2 = Percent oxygen in the exhaust gas as measured by Method 3 of appendix A of part 60 of this chapter.

(iv) For those emission sources where the emission limit is prescribed in terms of mass rather than concentration, mass emissions are to be determined using the following equation:

$$C_{BX} = \frac{C_b D_{VC} Q K \left(10^{-6}\right)}{Z}$$

Where:

C_{BX} = Vinyl chloride emissions, g/kg (lb/lb) product.

C_b = Concentration of vinyl chloride as measured by Test Method 106, ppmv.

D_{VC} = Density of vinyl chloride at standard conditions, 2.60 kg/m^3 (0.162 lb/ft^3).

Q = Volumetric flow rate as determined by Method 2 of appendix A to part 60 of this chapter, m^3/hr (ft^3/hr).

K = Unit conversion factor, 1,000 g/kg (1 lb/lb).

10^{-6} = Conversion factor for ppm.

Z = Production rate, kg/hr (lb/hr).

(2) Method 107 or Method 601 (incorporated by reference as specified in §61.18) is to be used to determine the concentration of vinyl chloride in each inprocess wastewater stream for which an emission limit is prescribed in §61.65(b)(9)(i).

(3) When a stripping operation is used to attain the emission limits in §61.64(e) and (f), emissions are to be determined using Method 107 as follows:

(i) The number of strippers (or reactors used as strippers) and samples and the types and grades of resin to be sampled are to be determined by the Administrator for each individual plant at the time of the test based on the plant's operation.

(ii) Each sample is to be taken immediately following the stripping operation.

(iii) The corresponding quantity of material processed by each stripper (or reactor used as a stripper) is to be determined on a dry solids basis and by a method submitted to and approved by the Administrator.

(iv) At the prior request of the Administrator, the owner or operator shall provide duplicates of the samples required in paragraph (g)(3)(i) of this section.

(4) Where control technology other than or in addition to a stripping operation is used to attain the emission limit in §61.64(e), emissions are to be determined as follows:

(i) Method 106 is to be used to determine atmospheric emissions from all of the process equipment simultaneously. The requirements of paragraph (g)(1) of this section are to be met.

(ii) Method 107 is to be used to determine the concentration of vinyl chloride in each inprocess wastewater stream subject to the emission limit prescribed in §61.64(e). Vinyl chloride mass emissions are to be determined using the following equation:

$$C_{BX} = \frac{C_{rvc} Q_{water} D_{water} Q K \left(10^{-6}\right)}{Z}$$

Where:

C_{BX} = Vinyl chloride emissions, g/kg (lb/lb) product in each inprocess wastewater stream.

C_{rvc} = Concentration of vinyl chloride in wastewater, as measured by Method 107, ppmw.

D_{water} = Density of wastewater, 1.0 kg/m^3 (0.0624 lb/ft^3).

Q_{water} = Wastewater flow rate, determined in accordance with a method which has been submitted to and approved by the Administrator, m^3/hr (ft^3/hr).

K = Unit conversion factor, 1,000 g/kg (1 lb/lb).

10^{-6} = Conversion factor for ppm.

Z = Production rate, kg/hr (lb/hr), determined in accordance with a method which has been submitted to and approved by the Administrator.

(5) The reactor opening loss for which an emission limit is prescribed in §61.64(a)(2) is to be determined. The number of reactors for which the determination is to be made is to be specified by the Administrator for each individual plant at the time of the determination based on the plant's operation.

(i) Except as provided in paragraph (g)(5)(ii) of this section, the reactor opening loss is to be determined using the following equation:

$$C_{BX} = C_b \frac{V_R D_{VC} Q K \left(10^{-6}\right)}{Z}$$

Where:

C_{BX} = Vinyl chloride emissions, g/kg (lb/lb) product.

C_b = Concentration of vinyl chloride, in ppmv, as determined by Method 106 or a portable hydrocarbon detector which measures hydrocarbons with a sensitivity of at least 10 ppmv.

V_R = Capacity of the reactor, m^3 (ft^3).

D_{VC} = Density of vinyl chloride at standard conditions, 2.60 kg/m^3 (0.162 lb/ft^3).

K = Unit conversion factor, 1,000 g/kg (1 lb/lb).

10^{-6} = Conversion factor for ppm.

Z = Production rate, kg/hr (lb/hr).

(A) If Method 106 is used to determine the concentration of vinyl chloride (C_b), the sample is to be withdrawn at a constant rate with a probe of sufficient length to reach the vessel bottom from the manhole. Samples are to be taken for 5 minutes within 6 inches of the vessel bottom, 5 minutes near the vessel center, and 5 minutes near the vessel top.

(B) If a portable hydrocarbon detector is used to determine the concentration of vinyl chloride (C_b), a probe of sufficient length to reach the vessel bottom from the manhole is to be used to make the measurements. One measurement will be made within 6 inches of the vessel bottom, one near the vessel center and one near the vessel top. Measurements are to be made at each location until the reading is stabilized. All hydrocarbons measured are to be assumed to be vinyl chloride.

(C) The production rate of polyvinyl chloride (Z), which is the product of the average batch weight and the number of batches produced since the reactor was last opened to the atmosphere, is to be determined by a method submitted to and approved by the Administrator.

(ii) A calculation based on the number of evacuations, the vacuum involved, and the volume of gas in the reactor is hereby approved by the Administrator as an alternative method for determining reactor opening loss for postpolymerization reactors in the manufacture of bulk resins. Calculation methods based on techniques other than repeated evacuation of the reactor may be approved by the Administrator for determining reactor opening loss for postpolymerization reactors in the manufacture of bulk resins.

(6) For a reactor that is used as a stripper, the emissions of vinyl chloride from reactor opening loss and all sources following the reactor used as a stripper for which an emission limit is prescribed in §61.64(f) are to be determined. The number of reactors for which the determination is to be made is to be specified by the Administrator for each individual plant at the time of the determination based on the plant's operation.

(i) For each batch stripped in the reactor, the following measurements are to be made:

(A) The concentration of vinyl chloride in resin after stripping, measured according to paragraph (g)(3) of this section;

(B) The reactor vacuum at end of strip from plant instrument; and

(C) The reactor temperature at the end of strip from plant instrument.

(ii) For each batch stripped in the reactor, the following information is to be determined:

(A) The vapor pressure of water in the reactor at the end of strip from the following table:

METRIC UNITS

Reactor vapor temperature (°C)	H_2O vapor pressure (mm Hg)	Reactor vapor temperature (°C)	H_2O vapor pressure (mm Hg)	Reactor vapor temperature (°C)	H_2O vapor pressure (mm Hg)
40	55.3	62	163.8	84	416.8
41	58.3	63	171.4	85	433.6
42	61.5	64	179.3	86	450.9
43	64.8	65	187.5	87	468.7
44	68.3	66	196.1	88	487.1
45	71.9	67	205.0	89	506.1
46	75.6	68	214.2	90	525.8
47	79.6	69	223.7	91	546.0
48	83.7	70	233.7	92	567.0
49	88.0	71	243.9	93	588.6
50	92.5	72	254.6	94	610.9
51	97.2	73	265.7	95	633.9
52	102.1	74	277.2	96	657.6
53	107.2	75	289.1	97	682.1
54	112.5	76	301.4	98	707.3
55	118.0	77	314.1	99	733.2
56	123.8	78	327.3	100	760.0
57	129.8	79	341.0		
58	136.1	80	355.1		
59	142.6	81	369.7		

METRIC UNITS—Continued

Reactor vapor temperature (°C)	H_2O vapor pressure (mm Hg)	Reactor vapor temperature (°C)	H_2O vapor pressure (mm Hg)	Reactor vapor temperature (°C)	H_2O vapor pressure (mm Hg)
60	149.4	82	384.9		
61	156.4	83	400.6		

ENGLISH UNITS

Reactor vapor temperature (°F)	H_2O vapor pressure (psia)	Reactor vapor temperature (°F)	H_2O vapor pressure (psia)	Reactor vapor temperature (°F)	H_2O vapor pressure (psia)
104	1.07	144	3.167	183	8.060
106	1.13	145	3.314	185	8.384
108	1.19	147	3.467	187	8.719
109	1.25	149	3.626	189	9.063
111	1.32	151	3.792	190	9.419
113	1.39	153	3.964	192	9.786
115	1.46	154	4.142	194	10.17
117	1.54	156	4.326	196	10.56
118	1.62	158	4.519	198	10.96
120	1.70	160	4.716	199	11.38
122	1.79	162	4.923	201	11.81
124	1.88	163	5.138	203	12.26
126	1.974	165	5.360	205	12.72
127	2.073	167	5.590	207	13.19
129	2.175	169	5.828	208	13.68
131	2.282	170	6.074	210	14.18
133	2.394	172	6.329	212	14.70
135	2.510	174	6.594		
136	2.632	176	6.866		
138	2.757	178	7.149		
140	2.889	180	7.443		
142	3.024	181	7.746		

(B) The partial pressure of vinyl chloride in reactor at end of strip from the following equation:

$$PP_{VC} = P_{ATM} - P_{RV} - P_W$$

Where:

PP_{VC} = Partial pressure of vinyl chloride, mm Hg (psia)
P_{ATM} = Atmospheric pressure at 0 °C (32 °F), 760 mm Hg (14.7 psia)
P_{RV} = Absolute pressure of reactor vacuum, mm Hg (psia)
P_W = Vapor pressure of water, mm Hg (psia)

(C) The reactor vapor space volume at the end of the strip from the following equation:

$$V_{RVS} = V_R - V_W - \frac{W_{PVC}}{D_{PVC}}$$

Where:

V_{RVS} = Reactor vapor space volume, m^3 (ft^3)
V_R = Reactor capacity, m^3 (ft^3)
V_W = Volume of water in reactor from recipe, m^3 (ft^3)
W_{PVC} = Dry weight of polyvinyl chloride in reactor from recipe, kg (lb)
D_{PVC} = Typical density of polyvinyl chloride, 1,400 kg/m^3 (87.4 lb/ft^3)

(iii) For each batch stripped in the reactor, the combined reactor opening loss and emissions from all sources following the reactor used as a stripper is to be determined using the following equation:

$$C_{BX} = K_1 \left(PPM_{VC}\right) + \frac{\left(PP_{VC}\right)\left(V_{RVS}\right)\left(R_{VC}\right)}{\left(M_{VC}\right)\left(T_R + K_T\right)}$$

Where:

C_{BX} = Vinyl chloride emissions, g/kg (lb/lb) product.

PPM_{VC} = Concentration of vinyl chloride in resin after stripping, ppmw

K_1 = Conversion factor from ppmw to units of emission standard, 0.001 (metric units) = 0.002 (English units)

PP_{VC} = Partial pressure of vinyl chloride determined according to paragraph (g)(6)(ii)(B) of this section, mm Hg (psia)

V_{RVS} = Reactor vapor space volume determined according to paragraph (g)(6)(ii)(C) of this section, m^3 (ft^3)

R_{VC} = Ideal gas constant for vinyl chloride, 1,002 g-°K/(mm Hg-m^3) [5.825 lb-°R/(psia-ft^3)]

M_{PVC} = Dry weight of polyvinyl chloride in reactor from recipe, kg (lb)

T_R = Reactor temperature, °C ((°deg;F)

K_T = Temperature conversion factor for °C to °K, 273 ((°deg;F to °R, 460)

(h)(1) Each piece of equipment within a process unit that can reasonably contain equipment in vinyl chloride service is presumed to be in vinyl chloride service unless an owner or operator demonstrates that the piece of equipment is not in vinyl chloride service. For a piece of equipment to be considered not in vinyl chloride service, it must be determined that the percent vinyl chloride content can be reasonably expected not to exceed 10 percent by weight for liquid streams or contained liquid volumes and 10 percent by volume for gas streams or contained gas volumes, which also includes gas volumes above liquid streams or contained liquid volumes. For purposes of determining the percent vinyl chloride content of the process fluid that is contained in or contacts equipment, procedures that conform to the methods described in ASTM D2267–68, 78, or 88 or D4420–94 (incorporated by reference as specified in § 61.18) shall be used.

(2)(i) An owner or operator may use engineering judgment rather than the procedures in paragraph (h)(1) of this section to demonstrate that the percent vinyl chloride content does not exceed 10 percent by weight for liquid streams and 10 percent by volume for gas streams, provided that the engineering judgment demonstrates that the vinyl chloride content clearly does not exceed 10 percent. When an owner or operator and the Administrator do not agree on whether a piece of equipment is not in vinyl chloride service, however, the procedures in paragraph (h)(1) of this section shall be used to resolve the disagreement.

(ii) If an owner or operator determines that a piece of equipment is in vinyl chloride service, the determination can be revised only after following the procedures in paragraph (h)(1) of this section.

(3) Samples used in determining the percent vinyl chloride content shall be representative of the process fluid that is contained in or contacts the equipment.

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29007, June 7, 1977; 47 FR 39486, Sept. 8, 1982; 50 FR 46295, Nov. 7, 1985; 51 FR 34912, Sept. 30, 1986; 65 FR 62152, Oct. 17, 2000]

§ 61.68 Emission monitoring.

(a) A vinyl chloride monitoring system is to be used to monitor on a continuous basis the emissions from the sources for which emission limits are prescribed in §§ 61.62 (a) and (b), 61.63(a), and 61.64 (a)(1), (b), (c), and (d), and for any control system to which reactor emissions are required to be ducted in § 61.64(a)(2) or to which fugitive emissions are required to be ducted in § 61.65 (b)(1)(ii), and (b)(2), (b)(5), (b)(6) (ii), and (b)(9)(ii).

(b) The vinyl chloride monitoring system(s) used to meet the requirement in paragraph (a) of this section is to be a device which obtains representative samples from one or more applicable emission points on a continuous sequential basis and analyzes the samples with gas chromatography or, if the owner or operator assumes that all hydrocarbons measured are vinyl chloride, with infrared spectrophotometry, flame ion detection, or an alternative method. The vinyl chloride monitoring system used to meet the requirements in § 61.65(b)(8)(i) may be used to meet the requirements of this section.

(c) A daily span check is to be conducted for each vinyl chloride monitoring system used. For all of the emission sources listed in paragraph (a) of this section, except the one for which an emission limit is prescribed in § 61.62(b), the daily span check is to be conducted with a concentration of vinyl chloride equal to 10 ppm. For the emission source for which an emission limit is prescribed in § 61.62(b), the daily span check is to be conducted with a concentration of vinyl chloride which is determined to be equivalent to the emission limit for that source based on the emission test required by §61.67. The calibration is to be done with either:

(1) A calibration gas mixture prepared from the gases specified in Sections 7.2.1 and 7.2.2 of Method 106 and in accordance with Section 10.1 of Method 106, or

(2) A calibration gas cylinder standard containing the appropriate concentration of vinyl chloride. The gas composition of the calibration gas cylinder standard is to have been certified by the manufacturer. The manufacturer must have recommended a maximum shelf life for each cylinder so that the concentration does not change greater than ±5 percent from the certified value. The date of gas cylinder preparation, certified vinyl chloride concentration and recommended maximum shelf life must have been affixed to the cylinder before shipment from the manufacturer to the buyer. If a gas chromatograph is used as the vinyl chloride monitoring system, these gas mixtures may be directly used to prepare a chromatograph calibration curve as described in Sections 8.1 and 9.2 of Method 106. The requirements in Sections 7.2.3.1 and 7.2.3.2 of Method 106 for certification of cylinder standards and for establishment and verification of calibration standards are to be followed.

(d) When exhaust gas(es), having emission limits that are subject to the requirement of paragraph (a) of this section, are emitted to the atmosphere without passing through the control system and required vinyl chloride monitoring system, the vinyl chloride content of the emission shall be calculated (in units of each applicable emission limit) by best practical engineering judgment based on the discharge duration and known VC concentrations in the affected equipment as determined in accordance with §61.67(h) or other acceptable method.

(e) For each 3-hour period, the vinyl chloride content of emissions subject to the requirements of paragraphs (a) and (d) of this section shall be averaged (weighted according to the proportion of time that emissions were continuously monitored and that emissions bypassed the continuous monitor) for purposes of reporting excess emissions under §61.70(c)(1).

(f) For each vinyl chloride emission to the atmosphere determined in accordance with paragraph (e) of this section to be in excess of the applicable emission limits, the owner or operator shall record the identity of the source(s), the date, time, and duration of the excess emission, the cause of the excess emission, and the approximate total vinyl chloride loss during the excess emission, and the method used for determining the vinyl chloride loss. This information shall be retained and made available for inspection by the Administrator as required by §61.71(a).

[41 FR 46564, Oct. 21, 1976; 41 FR 53017, Dec. 3, 1976, as amended at 42 FR 29007, June 7, 1977; 50 FR 46295, Nov. 7, 1985; 51 FR 34913, Sept. 30, 1986; 55 FR 28349, July 10, 1990; 65 FR 62155, Oct. 17, 2000]

§61.69 Initial report.

(a) An owner or operator of any source to which this subpart applies shall submit a statement in writing notifying the Administrator that the equipment and procedural specifications in §61.65 (b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (b)(6), (b)(7), and (b)(8) are being implemented.

(b)(1) In the case of an existing source or a new source which has an initial startup date preceding the effective date, the statement is to be submitted within 90 days of the effective date, unless a waiver of compliance is granted under §61.11, along with the information required under §61.10. If a waiver of compliance is granted, the statement is to be submitted on a date scheduled by the Administrator.

(2) In the case of a new source which did not have an initial startup date preceding the effective date, the statement is to be submitted within 90 days of the initial startup date.

(c) The statement is to contain the following information:

(1) A list of the equipment installed for compliance,

(2) A description of the physical and functional characteristics of each piece of equipment,

(3) A description of the methods which have been incorporated into the standard operating procedures for measuring or calculating the emissions for which emission limits are prescribed in § 61.65 (b)(1)(i) and (b)(6)(i),

(4) A statement that each piece of equipment is installed and that each piece of equipment and each procedure is being used.

§ 61.70 Reporting.

(a)(1) The owner or operator of any source to which this subpart applies shall submit to the Administrator on March 15, June 15, September 15, and December 15 of each year a report in writing containing the information required by this section. The first report is to be submitted following the first full 3-month reporting period after the initial report is submitted.

(2) In the case of an existing source, the approved reporting schedule shall be used. In addition, quarterly reports shall be submitted exactly 3 months following the current reporting dates.

(b)(1) In the case of an existing source or a new source which has an initial startup date preceding the effective date, the first report is to be submitted within 180 days of the effective date, unless a waiver of compliance is granted under § 61.11. If a waiver of compliance is granted, the first report is to be submitted on a date scheduled by the Administrator.

(2) In the case of a new source which did not have an initial startup date preceding the effective date, the first report is to be submitted within 180 days of the initial startup date.

(c) Unless otherwise specified, the owner or operator shall use the test methods in appendix B to this part to conduct emission tests as required by paragraphs (c)(2) and (c)(3) of this section, unless an alternative method has been approved by the Administrator. If the Administrator finds reasonable grounds to dispute the results obtained by an alternative method, he may require the use of a reference method. If the results of the reference and alternative methods do not agree, the results obtained by the reference method prevail, and the Administrator may notify the owner or operator that approval of the method previously considered to be alternative is withdrawn.

(1) The owner or operator shall include in the report a record of the vinyl chloride content of emissions for each 3-hour period during which average emissions are in excess of the emission limits in § 61.62(a) or (b), § 61.63(a), or § 61.64(a)(1), (b), (c), or (d), or during which average emissions are in excess of the emission limits specified for any control system to which reactor emissions are required to be ducted in § 61.64(a)(2) or to which fugitive emissions are required to be ducted in § 61.65(b)(I)(ii), (b)(2), (b)(5), (b)(6)(ii), or (b)(9)(ii). The number of 3-hour periods for which average emissions were determined during the reporting period shall be reported. If emissions in excess of the emission limits are not detected, the report shall contain a statement that no excess emissions have been detected. The emissions are to be determined in accordance with § 61.68(e).

(2) In polyvinyl chloride plants for which a stripping operation is used to attain the emission level prescribed in § 61.64(e), the owner or operator shall include in the report a record of the vinyl chloride content in the polyvinyl chloride resin.

(i) If batch stripping is used, one representative sample of polyvinyl chloride resin is to be taken from each batch of each grade of resin immediately following the completion of the stripping operation, and identified by resin type and grade and the date and time the batch is completed. The corresponding quantity of material processed in each stripper batch is to be recorded and identified by resin type and grade and the date and time the batch is completed.

(ii) If continuous stripping is used, one representative sample of polyvinyl chloride resin is to be taken for each grade of resin processed or at intervals of 8 hours for each grade of resin which is being processed, whichever is more frequent. The sample is to be taken as the resin flows out of the stripper and identified by resin type and grade and the date and time the sample was taken. The corresponding quantity of material processed by each stripper over the time period represented by the sample during the 8-hour period, is to be recorded and identified by resin type and grade and the date and time it represents.

(iii) The vinyl chloride content in each sample is to be determined by Method 107 as prescribed in §61.67(g)(3).

(iv) [Reserved]

(v) The report to the Administrator by the owner or operator is to include a record of any 24-hour average resin vinyl chloride concentration, as determined in this paragraph, in excess of the limits prescribed in §61.64(e). The vinyl chloride content found in each sample required by paragraphs (c)(2)(i) and (c)(2)(ii) of this section shall be averaged separately for each type of resin, over each calendar day and weighted according to the quantity of each grade of resin processed by the stripper(s) that calendar day, according to the following equation:

$$A_T = \frac{\sum_{i=1}^{n} P_{Gi} M_{Gi}}{Q_T} = \frac{P_{G1}M_{G1} + P_{G2}M_{G2} + \ldots + P_{Gn}M_{Gn}}{Q_T}$$

Where:

A_T = 24-hour average concentration of type T resin in ppm (dry weight basis).

Q_T = Total production of type T resin over the 24-hour period, in kg (ton).

T = Type of resin.

M_{Gi} = Concentration of vinyl chloride in one sample of grade G_i resin in ppm.

P_{Gi} = Production of grade G_i resin represented by the sample, in kg (ton).

G_i = Grade of resin: *e.g.*, G_1, G_2, G_3.

n = Total number of grades of resin produced during the 24-hour period.

The number of 24-hour average concentrations for each resin type determined during the reporting period shall be reported. If no 24-hour average resin vinyl chloride concentrations in excess of the limits prescribed in §61.64(e) are measured, the report shall state that no excess resin vinyl chloride concentrations were measured.

(vi) The owner or operator shall retain at the source and make available for inspection by the Administrator for a minimum of 3 years records of all data needed to furnish the information required by paragraph (c)(2)(v) of this section. The records are to contain the following information:

(A) The vinyl chloride content found in all the samples required in paragraphs (c)(2)(i) and (c)(2)(ii) of this section, identified by the resin type and grade and the time and date of the sample, and

(B) The corresponding quantity of polyvinyl chloride resin processed by the stripper(s), identified by the resin type and grade and the time and date it represents.

(3) The owner or operator shall include in the report a record of any emissions from each reactor opening in excess of the emission limits prescribed in §61.64(a)(2). Emissions are to be determined in accordance with §61.67(g)(5), except that emissions for each reactor are to be determined. The number of reactor openings during the reporting period shall be reported. If emissions in excess of the emission limits are not detected, the report shall include a statement that excess emissions have not been detected.

(4) In polyvinyl chloride plants for which stripping in the reactor is used to attain the emission level prescribed in §61.64(f), the owner or operator shall include in the report a record of the vinyl chloride emissions from reactor opening loss and all sources following the reactor used as a stripper.

(i) One representative sample of polyvinyl chloride resin is to be taken from each batch of each grade of resin immediately following the completion of the stripping operation, and identified by resin type and grade and the date and time the batch is completed. The corresponding quantity of material processed in each stripper batch is to be recorded and identified by resin type and grade and the date and time the batch is completed.

(ii) The vinyl chloride content in each sample is to be determined by Method 107 as prescribed in §61.67(g)(3).

(iii) The combined emissions from reactor opening loss and all sources following the reactor used as a stripper are to be determined for each batch stripped in a reactor according to the procedure prescribed in § 61.67(g)(6).

(iv) The report to the Administrator by the owner or operator is to include a record of any 24-hour average combined reactor opening loss and emissions from all sources following the reactor used as a stripper as determined in this paragraph, in excess of the limits prescribed in § 61.64(f). The combined reactor opening loss and emissions from all sources following the reactor used as a stripper associated with each batch are to be averaged separately for each type of resin, over each calendar day and weighted according to the quantity of each grade of resin stripped in reactors that calendar day as follows:

For each type of resin (suspension, dispersion, latex, bulk, other), the following calculation is to be performed:

$$A_T = \frac{\sum_{i=1}^{n} P_{Gi} C_{Gi}}{Q_T} = \frac{P_{G1}C_{G1} + P_{G2}C_{G2} + \ldots + P_{Gn}C_{Gn}}{Q_T}$$

Where:

A_T = 24-hour average combined reactor opening loss and emissions from all sources following the reactor used as a stripper, in g vinyl chloride/kg (lb/ton) product (dry weight basis).

Q_T = Total production of resin in batches for which stripping is completed during the 24-hour period, in kg (ton).

T = Type of resin.

C_{Gi} = Average combined reactor opening loss and emissions from all sources following the reactor used as a stripper of all batches of grade G_i resin for which stripping is completed during the 24-hour period, in g vinyl chloride/kg (lb/ton) product (dry weight basis) (determined according to procedure prescribed in § 61.67(g)(6)).

P_{Gi} = Production of grade G_i resin in the batches for which C is determined, in kg (ton).

G_i = Grade of resin: e.g., G_1, G_2, G_3.

n = Total number of grades of resin in batches for which stripping is completed during the 24-hour period.

The number of 24-hour average emissions determined during the reporting period shall be reported. If no 24-hour average combined reactor opening loss and emissions from all sources following the reactor used as a stripper in excess of the limits prescribed in § 61.64(f) are determined, the report shall state that no excess vinyl chloride emissions were determined.

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29007, June 7, 1977; 50 FR 46295, Nov. 7, 1985; 51 FR 34914, Sept. 30, 1986; 53 FR 36972, Sept. 23, 1988; 53 FR 46976, Nov. 21, 1988; 65 FR 62155, Oct. 17, 2000]

§ 61.71 Recordkeeping.

(a) The owner or operator of any source to which this subpart applies shall retain the following information at the source and make it available for inspection to the Administrator for a minimum of 3 years:

(1) A record of the leaks detected by the vinyl chloride monitoring system, as required by § 61.65(b)(8), including the concentrations of vinyl chloride measured, analyzed, and recorded by the vinyl chloride detector, the location of each measurement and the date and approximate time of each measurement.

(2) A record of the leaks detected during routine monitoring with the portable hydrocarbon detector and the action taken to repair the leaks, as required by § 61.65(b)(8), including a brief statement explaining the location and cause of each leak detected with the portable hydrocarbon detector, the date and time of the leak, and any action taken to eliminate that leak.

(3) A record of emissions measured in accordance with § 61.68.

(4) A daily operating record for each polyvinyl chloride reactor, including pressures and temperatures.

[41 FR 46594, Oct. 21, 1976, as amended at 42 FR 29007, June 7, 1977; 51 FR 34914, Sept. 30, 1986]

Subpart G [Reserved]

Subpart H—National Emission Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities

SOURCE: 54 FR 51695, Dec. 15, 1989, unless otherwise noted.

§ 61.90 Designation of facilities.

The provisions of this subpart apply to operations at any facility owned or operated by the Department of Energy that emits any radionuclide other than radon-222 and radon-220 into the air, except that this subpart does not apply to disposal at facilities subject to 40 CFR part 191, subpart B or 40 CFR part 192.

§ 61.91 Definitions.

As used in this subpart, all terms not defined here have the meaning given them in the Clean Air Act or 40 CFR part 61, subpart A. The following terms shall have the following specific meanings:

(a) *Effective dose equivalent* means the sum of the products of absorbed dose and appropriate factors to account for differences in biological effectiveness due to the quality of radiation and its distribution in the body of reference man. The unit of the effective dose equivalent is the rem. For purposes of this subpart, doses caused by radon-222 and its respective decay products formed after the radon is released from the facility are not included. The method for calculating effective dose equivalent and the definition of reference man are outlined in the International Commission on Radiological Protection's Publication No. 26.

(b) *Facility* means all buildings, structures and operations on one contiguous site.

(c) *Radionuclide* means a type of atom which spontaneously undergoes radioactive decay.

(d) *Residence* means any home, house, apartment building, or other place of dwelling which is occupied during any portion of the relevant year.

§ 61.92 Standard.

Emissions of radionuclides to the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr.

§ 61.93 Emission monitoring and test procedures.

(a) To determine compliance with the standard, radionuclide emissions shall be determined and effective dose equivalent values to members of the public calculated using EPA approved sampling procedures, computer models CAP–88 or AIRDOS-PC, or other procedures for which EPA has granted prior approval. DOE facilities for which the maximally exposed individual lives within 3 kilometers of all sources of emissions in the facility, may use EPA's COMPLY model and associated procedures for determining dose for purposes of compliance.

(b) Radionuclides emission rates from existing point sources (stacks or vents) shall be measured in accordance with the following requirements or with the requirements of paragraph (c) of this section, or other procedures for which EPA has granted prior approval:

(1) Effluent flow rate measurements shall be made using the following methods:

(i) Reference Method 2 of appendix A to part 60 of this chapter shall be used to determine velocity and volumetric flow rates for stacks and large vents.

(ii) Reference Method 2A of appendix A to part 60 of this chapter shall be used to measure flow rates through pipes and small vents.

(iii) The frequency of the flow rate measurements shall depend upon the variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary.