

detection and repair requirements on effective existing plans.

Leak Detection and Repair Requirements. The EPA established leak detection and repair requirements (40 CFR Part 61 Subpart V) for certain equipment in volatile hazardous air pollutant (VHAP) service on June 6, 1984. These requirements were established in conjunction with the final standard for benzene equipment leaks. The requirements of Subpart V generally apply to pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, flanges and other connectors, and product accumulator vessels. These requirements reflect the level of control that the EPA considers reasonable for equipment covered by developing standards for VHAP. The EPA is therefore proposing to add VC to the list of substances covered by Subpart V.

Subpart V would substantively affect only valves and flanges in VC service within this industry. All other equipment in VC service are already required by the VC standard to comply with equipment and work practice standards consistent with those in Subpart V. For example, pumps and compressors meeting the dual mechanical seal requirements of the current VC standard will be in compliance with the Subpart V requirements. In addition, the sampling connection systems requirements of Subpart V are essentially the same as the current standard. The use of rupture disks for controlling leaks from pressure relief devices, as required by the VC standard, is consistent with the "no detectable emissions" requirement included in Subpart V. Requirements for controlling leaks from pressure relief devices are described in more detail later in this section. Thus, Subpart V will affect primarily valves and flanges in VC service by requiring a specific monitoring schedule, leak definition and repair provisions.

Compliance with the provisions of Subpart V will be used to determine compliance with the portable monitor leak detection and elimination requirements in the current VC standard (40 CFR 61.65(b)(8)(ii)), and therefore, the current standard is being revised to reflect this change. However, process units within VC and PVC plants in which the percentage of leaking valves is equal to or less than 2.0 percent are considered by the EPA to be effectively controlling VC emissions from leaking valves. For these process units, the existing leak detection and elimination program will continue to be allowed while the percentage of leaking valves is

2.0 percent or less. Any process unit in which the percentage of leaking valves is found to exceed 2.0 percent will be required to comply with the provisions of Subpart V.

The Subpart V requirements for valves are based on a leak detection and repair program that requires (1) monthly monitoring for valves in gas/vapor and light liquid service, (2) an initial attempt at repairing these valves within 5 days after detection of a leak, (3) repair of leaking valves within 15 days after detection of the leak unless repair would require a process unit shutdown, and (4) repair of valves during the next process unit shutdown after repair is delayed until a process unit shutdown. Valves found not to leak for 2 successive months can be monitored quarterly until leaks are detected. Monitoring of equipment to detect leaks is conducted in accordance with Method 21 and a leak is defined as a measured organic concentration equal to or greater than 10,000 parts per million by volume (ppmv). For a complete description of the leak detection and repair requirements, see Subpart V (49 FR 23498, June 6, 1984).

In addition, Subpart V contains standards for other types of equipment (e.g., flanges, and open ended valves or lines). Standards for flanges include monitoring with a portable instrument under prescribed procedures within 5 days of observing evidence of a potential leak by visual, audible or other means. Open-ended valves or lines are required to be capped, blinded or fitted with a second valve. These provisions are not expected to significantly affect producers with these types of equipment in VC service. The equipment and procedures employed as normal practice by these producers or as a result of the current VC standard are expected generally to ensure compliance with Subpart V.

Pressure Relief Devices. The EPA proposed and promulgated the work practices, equipment, design and operational standards in the current standard before explicit legal authority existed in Section 112. These requirements are found in § 61.65(b). In August of 1977, Congress amended Section 112 to allow the use of these requirements. Section 112 of the Clean Air Act requires that an emission standard (i.e., a performance standard) be established for control of a hazardous air pollutant unless, in the judgment of the EPA, it is not feasible to prescribe or enforce such a standard. An emission standard allows for some flexibility in complying with the standard, since any control technique

that achieves that standard may be applied. Section 112(e)(2) defines the following conditions under which it is not feasible to prescribe or enforce an emission standard: (1) If the pollutants cannot be emitted through a conveyance designed and constructed to emit or capture the pollutant; or (2) if the application of measurement methodology is not practicable due to technological or economic limitations. Section 112(e)(1) allows that if an emission standard is not feasible to prescribe or enforce, then the EPA may instead promulgate a design, equipment, work practice, or operational standard, or combination thereof.

The EPA has reviewed the design, equipment, work practice and operational requirements contained in the current VC standard. The only sources covered by the current standard with one of the requirements for which a performance standard (i.e., an emission standard) is feasible are pressure relief devices. As discussed below, the EPA is setting a "no detectable emissions" limit for these sources. For the other sources, the EPA is reinstating those requirements as set forth in the current standard.

The EPA selected the use of rupture disks as the basis for the current standard for pressure relief devices. When the integrity of rupture disks is maintained, equipment leaks through the relief device are eliminated. Rupture disks normally maintain their integrity unless an overpressure occurs. After the occurrence of an overpressure, replacement of the rupture disk once again eliminates equipment leaks of VC through the pressure relief device.

For emission control techniques that eliminate equipment leaks, such as the use of rupture disks, a "no detectable emissions" limit is feasible. An instrument reading of less than 500 parts per million by volume (ppmv) above a background concentration based on Reference Method 21 can be used to indicate whether equipment leaks have been eliminated; that is, that the equipment has "no detectable emissions."

The "no detectable emission" limit would not apply to discharges through the pressure relief device during overpressure relief. (These releases are covered under §§ 61.64(a) and 61.65(a).) The standard would specify, however, that the relief device be returned to a state of "no detectable emissions" within 5 days after such a discharge. The standard would further require an annual test to verify the "no detectable emissions" status of the pressure relief devices and a test after each over

pressure relief. This administrative change implements the basis of this standard consistent with the requirements of Section 112(e).

Miscellaneous Revisions

Based on discussions with the EPA regional personnel regarding their experience in administering the current VC standard, the EPA is proposing several additional administrative revisions that would facilitate compliance and enforcement efforts associated with the current standard. These revisions represent minor changes to the standard. A brief description of these administrative revisions and the basis for making them follows.

Definition of Leak, Exhaust Gas and Relief Valve Discharge. Functional definitions of "leak", "exhaust gas" and "relief valve discharge" are being added to the standard to clarify the applicability of the standard to each of these types of VC emissions. During their review of enforcement and compliance experience since the standard was promulgated, the EPA discovered several cases of confusion over the intended meaning of "leak", "exhaust gas" and "relief valve discharge." These three distinct categories of VC emissions are being defined in the revised standard to provide compliance and industry personnel with a clear understanding of which part of the standard applies to any given discharge of VC emissions to the atmosphere.

Definition of EDC and VC Purification. In the past, some plants have misinterpreted which equipment components are included in EDC purification and VC purification processes with the result that emissions from certain equipment intended to be covered by the standard may not have been controlled. The definitions of "EDC purification" and "VC purification" are being revised to clarify that all purification equipment following EDC and VC formation were subject to regulation under the current standard.

10 ppmv Standard. Two clarifying revisions are being made to the 10 ppmv regulations to improve understanding of the applicability of this part of the standard. First, although the test method for determining compliance with the 10 ppmv standard specifies that the average results from three 1-hour sampling runs be used, this 3-hour averaging period is not specified in the 10 ppmv requirements. Specifying that emissions may not exceed 10 ppmv over a 3-hour averaging period clarifies that instantaneous compliance with the 10 ppmv standard is not an intended requirement. Moreover, specification of

the 3-hour averaging period is intended to clarify that the 10 ppmv standard applies to VC emissions in all exhaust gas streams covered by the 10 ppmv requirements, including any control device bypass streams. Requirements for calculating the VC content in bypassed emissions for purposes of reporting VC emissions in excess of the 10 ppmv standard are being added to the regulation. The EPA may use these calculations along with continuous emission monitoring results as indications of noncompliance if they show clearly that emissions in excess of the 10 ppmv requirements occurred.

The second clarifying revision to the 10 ppmv standard involves the specification that the 10 ppmv requirements apply to each exhaust gas stream from the covered equipment. The purpose of this revision is to clearly prohibit plants from using dilution with other exhaust gas streams as a technique for meeting the 10 ppmv requirement. This revision is not intended to prohibit the common practice of combining two or more exhaust gas streams in a common header leading to a control device. According to the revised 10 ppmv requirements, combining an exhaust gas stream containing more than 10 ppmv VC with another exhaust gas stream containing less than 10 ppmv VC is allowed only when the combined stream is ducted to the control device.

Relief Valve Definition. The current standard for relief valve discharges was intended to apply not only to safety relief valves but to all types of pressure relief devices. A definition of "relief valve" is being proposed under the revised standard to clarify that the current relief valve discharge standard also applied to rupture discs, manual vents and other pressure relief devices that vent to the atmosphere to protect process equipment from unsafe overpressure conditions. The definition of relief valve in the proposed standard is not intended to include pressure control valves used to control flow to an incinerator or other control device. However, the current relief valve discharge standard did cover emissions from pressure control valves. Also not included in the definition of relief valve are pressure control systems such as polymerization reaction shortstop systems or refrigerated water systems which act to reduce pressure by means other than venting.

Reactor Opening Loss Requirements for Bulk PVC Resin Producers. Bulk PVC resin production differs from production of other types of PVC resin in that the polymerization reaction is

carried out in two separate vessels. The reaction is initiated in the "prepolymerization" reactor and the reactor contents are then transferred to the "postpolymerization" reactor where the reaction is completed. Stripping of residual VC in bulk resin is performed following the postpolymerization step in the reactor vessel. The postpolymerization reactor generally is opened after every batch and must comply with the reactor opening loss limits specified in the standard. Because the prepolymerization reactor is opened less frequently and because determination of gross product (for reactor opening loss estimation) is difficult, the EPA has allowed plants to meet the equipment opening requirements for minimizing VC emissions from polymerization reactor openings. The reactor opening loss requirements are being revised at this time to specifically exclude prepolymerization reactors. Accordingly, VC emissions from all opening of prepolymerization reactors will be subject to the equipment opening requirements. This revision is intended to clarify and improve the consistency of the requirements of the revised standard as they apply to bulk PVC resin producers in light of actual industry practice. No reduction in VC emission control stringency will result from the change in requirements for prepolymerization reactors.

Inprocess Wastewater Requirements for Gasholder Seals. Under the current standards, the VC content of inprocess wastewater must be reduced to less than 10 ppm exposure of the wastewater to the atmosphere. In the case of gasholder water seals, the VC content in the exposed water seal may exceed 10 ppm during normal operation of the gasholder. Experience since the standard was promulgated indicates that compliance with the atmospheric exposure limit is not practicable for this particular inprocess wastewater source. Consequently, the definition of inprocess wastewater is being revised to exclude the exposed water seal of gasholders. The inprocess wastewater stripping requirements will continue to apply to wastewater after removal from the gasholder seal.

Elimination of 30-Day Limit on Equivalency Requests. The current standard specifies a 30-day limit for existing sources to submit requests for use of equivalent methods. Because such a limit poses a restriction on initiative by industry to develop alternative, and potentially more effective, control measures, the 30-day limitation is being eliminated.

Other. In addition to the revisions described above, a review of the recordkeeping and reporting requirements of the current standard was performed to identify ways to ease recordkeeping and reporting burden on plants and to identify any additional recordkeeping and/or reporting needs. The EPA identified two areas where the reporting burden on plants could be reduced. The current reporting requirements for residual VC monomer specifications and reactor opening measurements require that results of all compliance tests be reported in semiannual reports. The EPA is proposing to allow plants to report only test results that show exceedences of the respective standards. If no exceedences occur, plants will be required to indicate that fact in the semiannual report. This type of exception reporting is currently allowed for demonstration of compliance with the 10 ppmv standard for process vents. The second area is the requirement to report relief valve discharges within 10 days of their occurrence. The EPA is proposing to allow plants to report relief valve discharge occurrences on a quarterly basis rather than within 10 days of their occurrence. Furthermore, the reporting requirements for relief valve discharges have been streamlined by dropping the need to report actions taken and implemented preventive measures for each discharge. Information on the date, time, source, cause and estimated amount of individual relief valve discharge will be included with the semiannual reports along with information on compliance status.

Additional semiannual reporting requirements being added for PVC producers are the number of reactor openings and the design capacity number of polymerization batches for each resin type. This requirement will provide general information to facilitate review of industry-wide compliance status during past reporting periods.

Specific recordkeeping and reporting requirements are included as part of the revisions to the leak detection and repair requirements. The recordkeeping requirements include preparation of an initial log to record equipment component identification, physical tagging of equipment components which leak, and maintaining a record of equipment leaks and repair action. Included in the reporting requirements are the number of equipment leaks and the repair status of leaking components. Depending on the particular leak detection and repair program in place, these requirements may represent an

increase or decrease in the overall recordkeeping and reporting currently practiced by individual plants.

The EPA concluded that the current recordkeeping requirements, as specified in 40 CFR 61.71, are still appropriate. However, the EPA is proposing to extend the current recordkeeping requirements for all reporting activities from 2 to 3 years.

The net impact of the revised recordkeeping and reporting requirements proposed by the EPA is estimated to be a decrease in a paperwork burden of about 2.8 person-years.

It should be noted that all Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 101(14) hazardous substances such as vinyl chloride are subject to reporting requirements under Section 103(a) of CERCLA. CERCLA requires that persons in charge of vessels or facilities from which hazardous substances have been released in quantities (RQs) immediately notify the National Response Center (NRC) of the release. The toll-free 24-hour telephone number of the NRC is 800-424-8802 and in Washington, D.C. metropolitan area it is (202) 426-2875. (See CERCLA Section 103 and 48 FR 23552, May 25, 1983.)

Vinyl chloride was assigned a statutory 1 pound reportable quantity under Section 101(14) until adjusted by regulation, and is presently undergoing assessment for both chronic toxicity and carcinogenicity. Its RQ will be adjusted pending the outcome of these reviews by the Office of Emergency and Remedial Response. Federally permitted releases under CERCLA (See CERCLA Section 101(1) and 48 FR 23552) are not subject to CERCLA notification requirements or liabilities. However, releases of hazardous substances that are not subject to a permit or control regulation must be reported.

Regulatory Flexibility Analysis

The Regulatory Flexibility Act of 1980 requires that adverse effects of all Federal regulations upon small businesses be identified. According to the current guidelines of the Small Business Administration (SBA), a small business that produces or processes VC is one that has 500 employees or less. Currently, none of the existing producers or processors that are affected by the standard are estimated to be small by this definition. Since none of the companies meets the SBA definition of small business, no regulatory flexibility analysis is required. Even if an analysis were required, the proposed administrative

revisions do not increase the cost of compliance with the standard.

Public Hearing

If requested, a public hearing will be held to discuss the proposed revisions to the VC standard in accordance with sections 112(b)(1)(B) and 307(d)(5) of the Clean Air Act. Persons wishing to make oral presentations on the proposed revisions should contact the EPA at the address given in the ADDRESSES section of this preamble. Oral presentations will be limited to 15 minutes each. Any member of the public may file a written statement before, during, or within 30 days after the hearing. Written statements should be addressed to the Central Docket Section address given in the ADDRESSES section of this preamble.

A verbatim transcript of the hearing and written statements will be available for public inspection and copying during normal working hours at the EPA's Central Docket Section in Washington, D.C. (see ADDRESSES section of this preamble).

Docket

The docket is an organized and complete file of all the information submitted to or otherwise considered by the EPA in the development of this proposed rulemaking. The principal purposes of the docket are: (1) To allow interested parties to identify and locate documents so that they can effectively participate in the rulemaking process, and (2) to serve as the record in case of judicial review (except for interagency review materials [§ 307(d)(7)(A)]).

Miscellaneous

In accordance with section 117 of the Act, publication of this proposal was preceded by consultation with appropriate advisory committees, independent experts, and Federal departments and agencies. The Administrator will welcome comments on all aspects of the proposed regulation, including health, and economic and technological issues.

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq.* Comments on these requirements should be submitted to the Office of Information and Regulatory Affairs of OMB, marked "Attention: Desk Officer for EPA", as well as to the EPA docket described above. The final rule will respond to any OMB or public comments on the information collection requirements.

Under Executive Order 12291, the EPA must judge whether a regulation is "major" and therefore subject to the requirement of a Regulatory Impact Analysis. This regulation is not major because: (1) The national annualized compliance costs, including capital charges resulting from the standards total less than \$100 million; (2) the standards do not cause a major increase in prices or production costs; and (3) the standards do not cause significant adverse effects on domestic competition, employment, investment, productivity, innovation or competition in foreign markets.

This regulation was submitted to the Office of Management and Budget for review as required by Executive Order 12291. Any comments from OMB to EPA and any EPA response to those comments are included in Docket Number A-81-21. The docket is available for public inspection at EPA's Central Docket Section, West Tower Lobby, Gallery 1, Waterside Mall, 401 M Street, SW., Washington, D.C. 20460.

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that this rule, if promulgated, will not have a significant economic impact on a substantial number of small entities because no small entities are affected.

List of Subjects in 40 CFR Part 61

Air pollution control, Asbestos, Beryllium, Hazardous materials, Mercury, Vinyl chloride.

Dated: Dated December 31, 1984.

Alvin L. Alm,
Acting Administrator.

PART 61—[AMENDED]

It is proposed to amend 40 CFR Part 61 as follows:

1. The proposed changes to 40 CFR Part 61 proposed at 42 FR 28154, June 2, 1977 are withdrawn.

2. By revising the definitions in existing § 61.61(j), (l), (o) and (p) for "in process wastewater", "in vinyl chloride service", "ethylene dichloride purification" and "vinyl chloride purification" and by adding definitions for the terms "relief valve", "leak", "exhaust gas", "relief valve discharge" and "3-hour period" in new paragraphs (v), (w), (x), (y) and (z).

§ 61.61 Definitions.

(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. Gas-holder seal water is not inprocess wastewater until it is removed from the gasholder.

(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. This definition must be used in place of the definition of "VHAP service" in Subpart V of this part.

(o) "Ethylene dichloride purification" includes any part of the process of ethylene dichloride production which follows ethylene dichloride formation.

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

(v) "Relief valve" means each pressure relief device including pressure relief valves, rupture disks, manual vents and other pressure relief systems used to protect process components from overpressure conditions. "Relief valve" does not include control valves 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; (2) indications of liquid dripping; (3) a sensor detection of failure of a seal system, failure of a barrier fluid system, or both; and (4) detectable emissions as indicated by an instrument reading of greater than 500 ppm above background. Leaks also include events regulated under § 61.65(b)(8)(i) of detection of ambient concentrations in excess of background concentration. Emissions of vinyl chloride not regulated under § 61.61 (a) and (b); § 61.63(a); § 61.64 (a), (b), (c), (d), (e) and (f); and § 61.65 (a) and (b)(1), (b)(2), (b)(3), (b)(4), (b)(5), (b)(6), (b)(7) and (b)(9) shall be considered a leak. A relief valve discharge is not a leak.

(x) "Exhaust gas" means any offgas discharged directly or ultimately to the atmosphere that was initially contained in or was in direct contact with the equipment for which 10 ppm emission

limits are prescribed in § 61.62 (a) and (b); § 61.63(a); § 61.64 (a)(1), (a)(2), (b), (c) and (d); § 61.65 (b)(1)(ii), (b)(2), (b)(5), (b)(6)(ii) and (b)(9)(ii). A leak as defined in paragraph (w) of this section is not an exhaust gas.

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

(z) "3-hour period" means any three consecutive 1-hour periods (each hour commencing on the hour).

3. By changing "all exhaust gases" to "each exhaust gas stream" and making other minor clarifying revisions in § 61.62(a), § 61.63(a), and § 61.64 (a)(1), (b), (c) and (d) as follows:

§ 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 or as determined in accordance with § 61.67(g)(1)), 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.

§ 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 or as determined in accordance with § 61.67(g)(1)), 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.

§ 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 or as determined in accordance with § 61.67(g)(1)), except as provided in paragraph (a)(2) of this section and § 61.65(a).

(b) *Stripper.* The concentration of vinyl chloride in each exhaust gas stream from each stripper is not to exceed 10 ppm (average for 3-hour period or as determined in accordance with § 61.67(g)(1)), 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.

(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 or as determined in accordance with § 61.67(g)(1)), 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 or as determined in accordance with § 61.67(g)(1)), 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.

4. By revising existing paragraphs § 61.64(a)(2) and by removing (a)(3) as follows:

§ 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:

(2) The reactor opening loss from each reactor is not to exceed 0.02 g vinyl chloride/kg (0.00002 lb vinyl chloride/lb) of poly vinyl chloride product, except as provided in paragraphs (f)(1) and (f)(2) 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.

5. By revising paragraph (e) introductory text and adding paragraph (e)(3) to § 61.64 as follows:

§ 61.64 Emission standard for polyvinyl chloride plants.

(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:

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

6. By adding paragraph (f) to § 61.64 as follows:

§ 61.64 Emission standard for polyvinyl chloride plants

(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) 202 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.

7. By revising paragraph (a) to § 61.65 as follows:

§ 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 discharges.* (1) Polyvinyl chloride plants (suspension, dispersion, latex, and bulk processes).

(i) *Reactor.* The number of discharges to the atmosphere from relief valves on polyvinyl chloride reactors in vinyl chloride service is not to exceed the following limits except as provided in paragraph (a)(1)(iii) of this section. For all reactors producing suspension resins within a PVC plant, the number of relief valve discharges is not to exceed 0.035 discharges per 100 polymerization batches nor 4 discharges per year. For all reactors producing dispersion and latex resins within a PVC plant, the number of relief valve discharges is not to exceed 0.035 discharges per 100 polymerization batches. For all reactors including prepolymerization and postpolymerization reactors, producing bulk resins within a PVC plant the number of relief valve discharges is not to exceed 0.035 discharges per 100 polymerization batches.

(ii) The number of discharges to the atmosphere from relief valves on equipment (excluding polyvinyl chloride reactors) in vinyl chloride service is not to exceed 0.025 discharges per 100 polymerization batches nor 3 discharges per year except as provided in paragraph (a)(1)(iii) of this section.

(iii) The limits specified in paragraphs (a)(1)(i) and (a)(1)(ii) of this section may be exceeded when only one relief valve discharge to the atmosphere occurs during the 12-month period preceding the close of the 6-month reporting period.

(2) Polyvinyl chloride plants (solution and other continuous PVC production processes). The number of discharges to the atmosphere from relief valves on all equipment in vinyl chloride service is not to exceed 1 discharge per year.

(3) *Ethylene dichloride and vinyl chloride plants.* The number of discharges to the atmosphere from relief valves on equipment in vinyl chloride service is not to exceed 4 discharges per year.

(4) Each relief valve discharge that contributes to a relief valve discharge frequency in excess of any limit prescribed in paragraphs (a)(1), (a)(2) and (a)(3) of this paragraph constitutes

an individual violation of the respective limit.

(5) For every relief valve discharge to the atmosphere, the owner or operator shall record the identity of the source, the date and time of the discharge, the cause of the discharge, the approximate total vinyl chloride loss during the discharge, and the method used for determining the vinyl chloride loss. This information shall be submitted in writing to the Administrator as part of the reporting requirements of paragraph § 61.70. This information shall be retained and made available for inspection by the Administrator for a minimum of 3 years.

8. By revising paragraphs (b)(3), (b)(8)(i), (b)(8)(iii), (b)(8)(iv) and (b)(8)(vi) to § 61.65 as follows:

§ 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) . . .

(b) *Fugitive emission sources*

(1) . . .

(2) . . .

(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.

(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.

(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.

(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 the concentration of vinyl chloride in the exhaust gases does not exceed 10 ppm; or equivalent as provided in § 61.66.

(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.

(8) *Leak detection and elimination.*

(i) It includes a reliable and accurate vinyl chloride monitoring system 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.

(iii) 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)(vi) of this section. The calibration is to be done with either:

(A) A calibration gas mixture prepared from the gases specified in sections 5.2.1 and 5.2.2 of Test Method 106 and in accordance with section 7.1 of test Method 106, or

(B) 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 section 7.3 of Test Method 106. The requirements in section 5.2.3.1 and 5.2.3.2 of Test Method 106 for certification of cylinder standards and for establishment and verification of calibration standards are to be followed.

(iv) 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 the size and physical layout of the plant.

(vi) 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.

9. By revising paragraph (b)(4) to § 61.65 as follows:

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

(b) *Fugitive emission sources.*

(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.

10. By revising paragraph (b)(7) of § 61.65 as follows:

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

(b) *Fugitive emission sources.*

(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 the concentration of vinyl chloride in the exhaust gas does not exceed 10 ppm. Sampling techniques are to be such that sample containers in vinyl chloride are purged into a closed process system.

11. By revising paragraphs (b)(8) introductory text, (b)(8)(ii), and (b)(8)(v) to § 61.65 as follows:

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

(b) *Fugitive emission sources.*

(8) *Leak detection and elimination.* Vinyl chloride emissions due to leaks from equipment in vinyl chloride service are to be minimized by instituting and implementing a leak detection and repair program consistent with the provisions of Subpart V of this part. The 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. Approval of a program will be granted by the Administrator provided he finds:

(i) . . .

(ii) It includes a reliable and accurate portable hydrocarbon detector to be used consistent with the provisions of Subpart V of this part. An owner or operator is 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 equal to or less than 2.0 percent, as

determined in accordance with the following:

(A) A performance test as specified in paragraph (b)(8)(ii)(C) 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 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(d) of Subpart V 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 semiannual 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 must comply with all provisions of Subpart V of this part within 90 days.

(v) It contains a plan of action to be taken when a leak is detected consistent with Subpart V of this part.

12. By revising § 61.66 as follows:

§ 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.

13. By revising paragraph (f) of § 61.67 as follows:

§ 61.67 Emission tests.

(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.

14. By revising paragraphs (g)(3) introductory text, (g)(3)(i), and (g)(3)(iii) of § 61.67 as follows:

§ 61.67 Emission tests.

(g) . . .

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

(i) The number of strippers (or reactors using 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) . . .

(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.

15. By revising paragraph (g)(5) introductory text and adding paragraph (g)(6) to § 61.67 as follows:

§ 61.67 Emission tests.

(g) . . .

(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 specified by the Administrator for each individual plant at the time of the determination based on the plant's operation.

(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 (ppm) of vinyl chloride in resin after stripping, measured according to paragraph (g)(3) of this section:

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

(C) The reactor temperature (°C) at 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 (mm Hg) of water in the reactor at end of strip from the following table:

Reactor vapor temperature (°C)	H ₂ O vapor pressure (mm Hg)	Reactor vapor temperature (°C)	H ₂ O vapor pressure (mm Hg)	Reactor vapor temperature (°C)	H ₂ O vapor pressure (mm Hg)
40	55.3	61	156.4	82	364.9
41	58.3	62	163.8	83	400.8
42	61.5	63	171.4	84	438.9
43	64.8	64	179.3	85	479.8
44	68.3	65	187.6	86	523.9
45	71.9	66	196.1	87	569.7
46	75.8	67	205.0	88	617.1
47	79.8	68	214.2	89	666.1
48	83.7	69	223.7	90	716.8
49	88.0	70	233.7	91	769.1
50	92.5	71	243.9	92	823.9
51	97.2	72	254.8	93	880.9
52	102.1	73	265.7	94	939.9
53	107.2	74	277.2	95	1000.9
54	112.5	75	289.1	96	1063.9
55	118.0	76	301.4	97	1128.9
56	123.8	77	314.1	98	1195.9
57	129.8	78	327.3	99	1264.9
58	136.1	79	341.0	100	1335.9
59	142.6	80	355.1		
60	149.4	81	369.7		

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

$$PPVA = 760 - RV - VPW$$

Where:

PPVC = partial pressure of vinyl chloride, in mm Hg

760 = atmospheric pressure at 0°C, in mm Hg

RV = absolute value of reactor vacuum, in mm Hg

VPW = vapor pressure of water, in mm Hg

(C) The reactor vapor space volume (m³) at end of strip from the following equation:

$$RVS = RC - WV - \frac{PVCW}{833}$$

where:

RVS = reactor vapor space volume, in m³

RC = reactor capacity, in m³

WV = volume of water in reactor from recipe, in m³

PVCW = dry weight of polyvinyl chloride in reactor from recipe, in kg

833 = typical density of polyvinyl chloride, in kg/m³

(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:

$$C = (PPMVC)(10^{-7}) +$$

$$\frac{(PPVC)(RVS)(1.002)}{(PVCW)(273 + RT)}$$

where:

C = g vinyl chloride/kg polyvinyl chloride product

PPMVC = concentration of vinyl chloride in resin after stripping, in ppm

10⁻⁷ = conversion factor for ppm

PPVC = partial pressure of vinyl chloride determined according to paragraph (g)(6)(ii)(B) of this section, in mm Hg

RVS = reactor vapor space volume determined according to paragraph (g)(6)(iii)(C) of this section, in m³

1.002 = ideal gas constant in g-°K/mm Hg-m³ for vinyl chloride

PVCW = dry weight of polyvinyl chloride in reactor from recipe, in kg

273 = conversion factor for °C to °K

RT = reactor temperature, in °C

16. By adding paragraph (h) to § 61.67 as follows:

(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 and 10 percent by volume for gas streams. 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 Method D-2267 (incorporated by reference as specified in § 61.18) shall be used.

(2)(1) 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.

17. By adding paragraphs (d), (e) and (f) to § 61.68 as follows:

§ 61.68 Emission monitoring.

(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 around 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 emission, 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).

18. By changing the title from "Semiannual report" to "Reporting" and by revising paragraph (a) of § 61.70 as follows:

§ 61.70 Reporting.

(a)(1) The owner or operator of any source to which this subpart applies shall submit to the Administrator on September 15 and March 15 of each year a report in writing containing the information required in paragraphs (c), (d) and (e) of this section and on December 15 and June 15 of each year a report in writing containing the information required in paragraph (e) of this section, except as provided in paragraph (a)(2).

(2) In the case of an existing source that submits semiannual reports on an approved fixed schedule other than September 15 and March 15, the approved semiannual reporting schedule shall be used to report the information required in paragraphs (c), (d) and (e) of this section. In addition, the information required in paragraph (e) of this section will be reported exactly 3 months following the semiannual reporting dates.

(3) The first report is to be submitted following the first full 3 month reporting period after the initial report is submitted.

19. By revising paragraph (c)(1) of § 61.70 as follows:

§ 61.70 Reporting.

(c) . . .

(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). 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).

20. By revising paragraph (c)(2) introductory text, removing paragraphs (c)(2)(iv), revising paragraph (c)(2)(iii) and revising (c)(2)(v) and (c)(2)(vi) introductory text to § 61.70 as follows:

§ 61.70 Reporting.

(c) . . .

(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) . . .
(ii) . . .

(iii) The vinyl chloride content in each sample is to be determined by Test 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)(iii) 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:

$$A_{r,i} = \frac{\sum_i 1 P_i M_i}{Q_{r,i}} = \frac{P_{G_1} M_{G_1} + P_{G_2} M_{G_2} + \dots + P_{G_n} M_{G_n}}{Q_{r,i}}$$

where:

A = 24-hour average concentration of type, T_i resin in ppm (dry weight basis).

Q = Total production of type T_i resin over the 24-hour period, in kg.

T_i = Type of resin: $i = 1, 2, \dots, m$ where m is total number of resin types produced during the 24-hour period.

M = Concentration of vinyl chloride in one sample of grade G_i resin, in ppm.

P = Production of grade G_i resin represented by the sample, in kg.

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

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

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) . . .

(B) . . .

21. By revising paragraph (c)(3) of § 61.70 as follows:

§ 61.70 Reporting.

(C) . . .

(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. If emissions in excess of the emission limits are not detected, the report shall

include a statement that excess emissions have not been detected.

22. By adding paragraph (c)(4) to § 61.70 as follows:

§ 61.70 Reporting

(c) . . .

(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 Test Method 107 as prescribed in § 61.67(g)(3).

(iii) The combined emission 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:

$$A = \frac{\sum_{i=1}^n P_{G_i} C_{G_i}}{Q} = \frac{P_{G_1} C_{G_1} + P_{G_2} C_{G_2} + \dots + P_{G_n} C_{G_n}}{Q}$$

Where:

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

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

C = 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 product (dry weight basis) (determined according to procedure prescribed in § 61.67(g)(6)).

P = Production of grade G_i resin in the batches for which C is determined, in kg.

G_i = Grade of resin; e.g., G_1 , G_2 , and G_n .

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

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.

23. By adding paragraphs (d), (e) and (f) to § 61.70 as follows:

§ 61.70 Reporting.

(d) The owner or operator shall include in the report a record of relief valve discharges as prescribed in § 61.65(a)(4), and the owner or operator shall report exceedences of the relief valve discharge frequency limits prescribed in § 61.65(a) to be determined as follows:

(1) For polyvinyl chloride plants producing dispersion, latex or bulk resins, the relief valve discharge frequency from polyvinyl chloride reactors is to be determined using the following equation. Separate calculations are to be made for each resin type (t) as defined:

$$F_t = \frac{N}{Y}$$

Where

F_t = relief valve discharge frequency per 100 polymerization batches from all reactors producing resin type t

N = total number of relief valve discharges during the 12-month period preceding the close of the 6-month reporting period from all reactors producing resin type t

Y = total number of polymerization batches of resin type t during the 12-month period preceding the close of the 6-month reporting period divided by 100

t = resin type: dispersion (including latex) or bulk resin type

(2) For polyvinyl chloride plants producing suspension resins, the relief valve discharge frequency from polyvinyl chloride reactors is to be determined in two ways using the following equations:

$$F_{ss} = \frac{N}{Y} \text{ and } F_{ss} = N$$

where

F_{ss} = relief valve discharge frequency per 100 polymerization batches from all reactors producing suspension resin

F_{ss} = relief valve discharge frequency per 12-month period from all reactors producing suspension resin

N = total number of relief valve discharges during the 12-month period preceding the close of the 6-month reporting period from all reactors producing suspension resin

Y = total number of polymerization batches of suspension resin during the 12-month period preceding the close of the 6-month reporting period divided by 100

(3) For polyvinyl chloride plants producing suspension, dispersion, latex, or bulk resins, the relief valve discharge frequency from all other equipment (excluding polyvinyl chloride reactors) is to be determined in two ways using the following equations:

$$F_o = \frac{N}{Y} \text{ and } F_o = N$$

where

F_o = relief valve discharge frequency per 100 polymerization batches from all equipment (excluding reactors)

F_o = relief valve discharge frequency per 12-month period from all equipment (excluding reactors)

N = total number of relief valve discharges during the 12-month period preceding the close of the 6-month reporting period from all equipment (excluding reactors)

Y = total number of polymerization batches of all resin types combined divided by 100

(4) For polyvinyl chloride plants using the solution process or any other continuous production process, the relief valve discharge frequency is the summation of each relief valve discharge from all equipment types during the 12-month period preceding the close of the 6-month reporting period.

(5) For ethylene dichloride/vinyl chloride plants, the relief valve discharge frequency is the summation of each relief valve discharge from all equipment types during the 12-month period preceding the close of the 6-month reporting period.

(6) A polymerization batch consists of each sequence of charging VC and other materials to the reactor, heating reactor contents, polymerization of reactor contents, and removal of reactor contents including any incomplete sequence that is aborted after charging VC to the reactor. For bulk resin production plants, a single "polymerization batch" includes both prepolymerization and postpolymerization reactor operations.

(e) The owner or operator shall include in the report the number of relief valve discharges to the atmosphere during the 3-month period preceding the report from each of the following sources: suspension resin production reactors; dispersion and latex resin production reactors; bulk resin production reactors; all nonreactor equipment in PVC plants; all equipment used in solution process and other continuous process PVC plants; and all equipment in EDC/VC plants; any other source.

(f) The owner or operator shall include in the report the number of reactor openings and the design capacity of the number of polymerization batches for each type of resin in each plant during the 6-month period preceding the report. The design capacity of the number of polymerization batches may be defined

Initially and remain unchanged unless significant changes to the design capacity occur.

24. By revising paragraph (a) introductory text of § 61.71 as follows:

§ 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 by the Administrator for a minimum of 3 years:

25. By adding the words "vinyl chloride" to the definition of the term "volatile hazardous air pollutant" in § 61.241 of Subpart V as follows:

§ 61.241 Definitions.

"Volatile hazardous air pollutant" or "VHAP" means a substance regulated under this part for which a standard for equipment leaks of the substance has been proposed and promulgated. Benzene is a VHAP. Vinyl chloride is a VHAP.

(Sec. 112 Clean Air Act of 1976)

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