IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 85-1150

NATURAL RESOURCES DEFENSE COUNCIL, INC.

Petitioner,

v.

U.S. ENVIRONMENTAL PROTECTION AGENCY, et al.,

Respondents.

Petition for Review of an Action of the
Environmental Protection Agency

BRIEF FOR PETITIONER

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June 17, 1985

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FOR THE DISTRICT OF COLUMBIA CIRCUIT

NATURAL RESOURCES DEFENSE COUNCIL, Inc. Petitioner, v. U.S. Environmental Protection Agency, et al., Respondents.	No. 85-1150

CERTIFICATE REQUIRED BY RULE 8(c) OF THE
GENERAL RULES OF THE UNITED STATES COURT
OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

The undersigned, counsel of record for the Petitioner, certifies that the following organizations have an interest in the outcome of this case:

Petitioner: Natural Resources Defense Council, Inc.

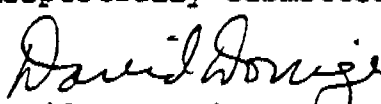
Respondent: U.S. Environmental Protection Agency and Lee M. Thomas, Administrator

Intervenor: The Vinyl Institute, a division of the Society of the Plastics Industry, Inc.

Petitioner is relying on the intervenor to certify its members, affiliates, etc., to the Court itself.

These representations are made in order that the judges of this Court, inter alia, may evaluate possible disqualification of recusal.

Respectfully submitted,



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MISCELLANEOUS

QUESTION PRESENTED

Whether the Environmental Protection Agency, despite the exclusive mandate of Section 112 of the Clean Air Act to protect public health with an ample margin of safety, may impose cost-benefit or technological feasibility tests on proposed standards for hazardous air pollutants.

Similar issues are involved in two other proceedings pending before the Court regarding regulation of hazardous air pollutants: Natural Resources Defense Council v. Thomas, Nos. 84-1387 et al. (benzene), and Environmental Defense Fund v. Thomas, Nos. 84-1524 et al., Natural Resources Defense Council v. Thomas, Nos. 85-1123 et al., and American Mining Congress v. EPA, Nos. 85-1285 et al. (radionuclides).

BASIS FOR JURISDICTION

The Court has jurisdiction to review this action pursuant to Section 307(b)(1) of the Clean Air Act, 42 U.S.C. §7607(b)(1) (1982).

STATUTES AND REGULATIONS

The relevant statutory and regulatory provisions are set forth in Appendix A.

REFERENCES TO PARTIES AND RULINGS

Petitioner seeks review of a final action of the Administrator of the Environmental Protection Agency withdrawing proposed amendments to the national emission standards for the

hazardous air pollutant vinyl chloride. The proposed amendments which were withdrawn by this action were the product of a settlement agreement reached in Environmental Defense Fund v. EPA, No. 76-2045 (D.C. Cir., filed Nov. 19, 1976, settled and dismissed June 24, 1977).

This notice withdrawing the proposed amendments was published on January 9, 1985, at 50 Fed. Reg. 1182. The vinyl chloride standard, the proposed amendments thereto, and the notice of withdrawal of the proposed amendment, are reprinted in Appendix A.

Intervenor Vinyl Institute is not identified in the caption.

STATEMENT OF THE CASE

In January 1985 the Environmental Protection Agency (EPA) issued a notice withdrawing a set of amendments originally proposed in 1977 to strengthen the national emission standards for the cancer-causing air pollutant vinyl chloride. In withdrawing the proposed amendments EPA violated the law by employing cost-benefit and technological feasibility tests that are prohibited by the Clean Air Act. Section 112(b)(1)(B) of the Act, 42 U.S.C. §7412(b)(1)(B) (1982), instructs EPA to establish standards for each hazardous air pollutant at the level that "provides an ample margin of safety to protect the public health." This clear and exclusive mandate for protection of public health forbids EPA from importing cost-benefit or technological feasibility tests into standard-setting under Section 112. Because EPA violated the mandate of Section 112, the withdrawal of the proposed amendments should be vacated and the proceeding remanded to the agency.

A. Statutory Provisions

Section 112, enacted with the Clean Air Act Amendments of 1970,[1/] provides for highly protective federal regulation of the most toxic air pollutants. The statute defines a "hazardous air pollutant" as any substance

> which in the judgment of the Administrator causes, or contributes to, air pollution which may reasonably be anticipated to result in an increase in mortality or an increase in

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1/ 84 Stat. 1676.

> serious irreversible, or incapacitating reversible, illness.

Section 112(a)(1), 42 U.S.C. §7412(a)(1).[2] Substances capable of causing serious, usually fatal diseases such as cancer obviously qualify as hazardous air pollutants. The EPA Administrator is directed to keep an up-to-date list of such pollutants. Section 112(b)(1)(A).

Within 180 days of listing a hazardous air pollutant, the Administrator must propose national emission standards for it.[3] Within a further 180 days, unless he finds that the substance "clearly is not" a hazardous pollutant, the Administrator must issue final standards. Section 112(b)(1)(B), 42 U.S.C. §7412(b)(1)(B).

The last sentence of Section 112(b)(1)(B) is the central statutory provision at issue in this case. It states: "The Administrator shall establish any such standard at the level which in his judgment provides an ample margin of safety to

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[2] Except where otherwise indicated, citations henceforth are to the 1982 edition of the United States Code.

[3] An "emission standard" is defined in section 302(k) of the Act as "a requirement established by . . . the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis. . . ." 42 U.S.C. §7602(k). Section 112(e)(1) also allows EPA to set a "design, equipment, work practice, or operational standard" if it is "not feasible to prescribe or enforce an emission standard." This infeasibility condition is specifically limited by Section 112(e)(2) to three narrow circumstances: (1) where the pollutant cannot be ducted through a centralized smokestack, control device, or other conveyance, (2) where use of such a centralized conveyance would conflict with other legal requirements, or (3) were measuring (as distinguished from controlling) emission rates, quantities, or concentrations is not technologically or economically practicable. 42 U.S.C. §7412(e)(1), (2).

protect the public health from such hazardous air pollutant." Like other sections of the Clean Air Act construed by this Court and the Supreme Court,[4] this sentence speaks exclusively of protecting public health. It makes no other factor relevant to setting standards. It precludes the Administrator from grafting cost-benefit or technological feasibility tests onto standard-setting under Section 112.

This legislative choice was deliberate. Congress explicitly considered and accepted the possibility that in order to protect public health, some facilities emitting hazardous air pollutants might have to be closed. As stated in floor debate by Senator Muskie (the chief sponsor and floor manager of the bill, chairman of the authorizing subcommittee, and later chairman of the Senate conferees): "The committee was presented with strong evidence that any level of emissions of certain pollutants may produce adverse effects that cannot be tolerated."[5] And as stated in the summary of the final legislation presented by Muskie in post-conference committee debate:

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[4] See Lead Industries Ass'n v. EPA, 647 F.2d 1130 (D.C. Cir. 1980), cert. denied 449 U.S. 1042 (1980), and American Petroleum Inst. v. Costle, 665 F.2d 1176 (D.C. Cir. 1981), cert. denied 455 U.S. 1034 (1982) (the "adequate margin of safety" requirement in Section 109(b)(1), 42 U.S.C. §7409(b)(1), precludes cost-benefit or technological feasibility tests in setting National Ambient Air Quality Standards). See also Union Electric Co. v. EPA, 427 U.S. 246 (1976) (Section 110(a)(2), 42 U.S.C. §7410(a)(2), precludes such tests in reviewing State Implementation Plans).

[5] Cong. Rec. S16091 (daily ed., Sept. 21, 1970), reprinted in 1 A Legislative History of the Clean Air Act Amendments of 1970 227 (Senate Comm. on Public Works, 1974) (hereinafter cited as "Leg. Hist.").

> The standards must be set to provide an ample margin of safety to protect the public health. This could mean, effectively, that a plant would be required to close because of the absence of control techniques. It could include emission standards which allowed for no measurable emissions.[6]

B. Factual Background

Vinyl chloride, or "VC," is a gaseous synthetic chemical used to manufacture polyvinyl chloride plastics. In 1974, vinyl chloride was discovered to be a potent human carcinogen. When the 1976 standard was set, vinyl chloride was known to cause an otherwise extremely rare form of liver cancer. This cancer, known as angiosarcoma of the liver, is always fatal.[7] The danger from vinyl chloride is now known to be even greater, as more recent studies have demonstrated that VC also causes brain cancer and may cause cancers of the lung and other organs as well. As stated by a senior scientist in EPA's Carcinogen Assessment Group: "[W]e now know that vinyl chloride has the potential of causing cancer at more sites than we knew about in 1975, but a numerical estimate of the increased risk cannot be made."[8]

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[6] Summary of the Provision of Conference Agreement on the Clean Air Amendments of 1970, Exhibit 1 to Statement of Sen. Muskie, Cong. Rec. S20601 (daily ed., Dec. 18, 1970), 1 Leg. Hist. 133.

[7] See 40 Fed. Reg. 59532-33; 41 Fed. Reg. 46560.

[8] Memorandum from R.E. McGaughy, EPA Carcinogen Assessment Gro to J. Padgett, Director, EPA Office of Air Quality Pla ng and Standards (Jan. 5, 1984) at p. 1 (Record, B-27).

EPA has consistently recognized that no safe level of exposure to vinyl chloride can be identified. As stated in the January 1985 notice: "[T]here is no known threshold level of effects for VC."[9/]

Vinyl chloride gas is manufactured from chemical raw materials at 17 plants (known as "EDC/VC plants") located in four states. It is transformed into polyvinyl chloride plastic resins at 39 plants (known as "PVC" plants") located in 18 states.[10/] In 1975 EPA estimated that more than 4.6 million people lived within five miles of the then-operating plants.[11/] Since then, the number of facilities and the annual production capacity of VC and PVC, as well as the population in the urban and industrialized areas where these facilities are located, have continued to grow.[12/]

1. The 1976 Standards

In 1975 EPA designated vinyl chloride a hazardous air pollutant.[13/] The agency proposed, and a year later promulgated, standards covering VC releases from emission points in the EDC/VC

9/ 50 Fed. Reg. 1183 (1985) (col. 1). See also, 42 Fed. Reg. 28154 (col. 2) (1977) (proposed amendments); 40 Fed. Reg. 59532-33 (1976) (original proposal). See generally, 49 Fed. Reg. 46294 (1984) (carcinogen risk assessment guidelines).

10/ EPA, Vinyl Chloride - A Review of National Emission Standards (EPA-450/3-82-003, Feb. 1982) at 2-9 through 2-11 (Record, A-25). The term "EDC/VC plant" comes from the acronym for the principal raw material, ethylene dichloride.

11/ 40 Fed. Reg. 59533 (col. 1).

12/ EPA, Vinyl Chloride Review, supra note 8, at 2-11.

13/ 40 Fed. Reg. 59532 (1975).

and PVC plants.[14/] The standards, however, did not measure up to the statutory "ample margin of safety" test. Rather, they were developed with technological and economic factors explicitly in mind.

As noted above, EPA recognizes that there is no known safe level of exposure to vinyl chloride. Vinyl chloride, therefore, presented precisely the situation envisioned in the summary of the conference committee agreement, where compliance with the statutory "ample margin of safety" test required setting "emission standards which allowed for no measurable emissions."

But EPA declined to do this. In lieu of the statutory criterion, EPA substituted a new test: that the standards should

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14/ Id. & 41 Fed. Reg. 46559 (1976), codified at 40 C.F.R. Part 61, Subpart F. The major requirements of the standards set in 1976 were:

(1) A prohibition on all preventable discharges of vinyl chloride to the air from the pressure relief valves on the large, pressurized reaction vessels (called "reactors") used for transforming vinyl chloride gas into polyvinyl chloride plastic resins. 40 C.F.R. §61.65(a);

(2) A limit of 10 parts per million (ppm) on the concentration of vinyl chloride allowed in emissions from vents on the reactors and other specified types of equipment. Id. §§61.62(a), 61.63(a), 61.64(a)(1) & (b)-(d), 61.65(b)(5) & (6);

(3) Limits on the amount of vinyl chloride allowed to escape when reactors or other vessels are opened (e.g., in order to remove newly-made PVC). Id. §§61.62(b), 61.64(a)(2), (e)(2). These limits are expressed in terms of grams of VC permitted to escape per kilogram of product;

(4) A program of inspecting and repairing leaks in the thousands of valves, pumps, compressors, and other equipment found in an EDC/VC or PVC plant. Id. §61.65(b); and

(5) Limits on the concentration of vinyl chloride allowed to remain in freshly manufactured PVC plastic resins. Id. §61.64(e) (requirements for "stripping" residual VC gas from the resins).

only require "emission reduction to the lowest level achievable by the use of the best available control technology." Before a control measure would be deemed "available," EPA imposed on itself the obligation of finding (1) that the control was already in use in the chemical industry and (2) that it would not impose costs the agency believed were "grossly disproportionate to the emission reduction achieved."[15/] The standards were limited to control measures that passed these "availability" and cost screens.[16/]

Even after compliance with the standards, millions of pounds of vinyl chloride gas still escape into the air from these facilities each year. The population surrounding the plants remains exposed to a cancer-causing air pollutant with no safe level. The public, still is not protected with an ample margin of safety.

2. The 1977 Proposed Amendments

Upon the promulgation of the standards, the Environmental Defense Fund filed suit in this Court.[17/] The case was not litigated, however, because the parties reached a settlement

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15/ 40 Fed. Reg. at 59534.

16/ See, e.g., the notice of proposal's explanation of the basis for the 10 ppm limit on VC emissions from reactors and other equipment, 40 Fed. Reg. 59536 (col. 2) ("In EPA's judgment, an outlet concentration of 10 ppm represents the best available control technology for these sources . . ."). See also the explanation of the relaxed limit for the oxychlorination reactor, id. (col.3) (Cost of incinerating gas stream from these reactors "would be grossly disproportionate to the emission reduction achieved").

17/ Environmental Defense Fund v. Train, No. 76-2045 (D.C. Cir., filed Nov. 19, 1976).

agreement under which EPA obligated itself to propose regulatory amendments to strengthen the standards in specific ways.[18]

The contemplated amendments were proposed on June 2, 1977.[19] The notice of proposal restated the conclusion that vinyl chloride has no known threshold of effect and endangers public health at any level of exposure. Thus, it continued, in order to protect public health as intended by the Clean Air Act, EPA was establishing a "zero emissions goal."[20] The Agency stated:

> In order to insure that the standard continues to approach the only level of emissions which is known to be absolutely protective of health, namely zero emissions, EPA is proposing amendments which require more efficient use of existing control technology at existing plants, and which encourage technology to reach this goal without banning vinyl chloride.[21]

The proposal included four major amendments to lower the emissions allowed by the 1976 standards.[22] It also stated that

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[18] Id. (settled and dismissed, June 24, 1977).

[19] 42 Fed. Reg. 28154 (1977).

[20] Id. (col. 2).

[21] Id. (col. 3).

[22] The following changes were proposed:

(1) Lowering from 10 ppm to 5 ppm the limit on VC concentration in emissions from vents on reactors, etc. The proposed 5 ppm limit would take effect immediately for new sources and within three years for existing sources. Proposed 40 C.F.R. §§61.62(a), 61.63(a), 61.64(a)-(d), 61.65(c), 42 Fed. Reg. 28157-58;

(2) For new oxychlorination reactors, eliminating the special 0.2 g/kg limit and requiring them to meet the 5 ppm limit. Proposed 40 C.F.R. §61.62(b), 42 Fed. Reg. 28157 (col.
(footnote continued)

within three years of the promulgation of these amendments, EPA would begin a study to review information on control developments "to determine what further changes might then be appropriate to move toward the goal of zero vinyl chloride emissions."[23/]

3. The 1985 Withdrawal of the Proposed Amendments

Despite repeated requests that EPA act,[24/] the amendments were never promulgated. More than seven years later, in the action here under review, EPA reneged on the substance of the settlement agreement and withdrew the proposal.[25/]

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2). This could be accomplished, EPA found, by incinerating the exhaust, using oxygen, rather than air, as a feedstock. Id. at 28155 (cols. 1-2);

(3) For new PVC resins -- resins not previously made at a facility -- cutting the vinyl chloride concentrations allowed to remain in freshly manufactured resins to one fourth the levels allowed by the 1976 standard. Proposed 40 C.F.R. §61.64(e), 42 Fed. Reg. 28158; and

(4) Requiring new vinyl chloride emissions to be offset by emission reductions at an existing plant when a new VC source is built within 5 miles of an existing one. Proposed 40 C.F.R. §61.73, 42 Fed. Reg. 28159.

23/ 42 Fed. Reg. 28156 (col. 2).

24/ In the years following the proposal, the Environmental Defense Fund repeatedly urged EPA to promulgate the amendments. See, e.g., letters from Robert Rauch, EDF Staff Attorney, to Douglas Costle, EPA Administrator (Feb. 3, 1978) (Record, D-91); Rauch to David Hawkins, EPA Assistant Administrator for Air, Noise, and Radiation (Aug. 15, 1979) (Record, D-95); Larry Corcoran, EDF Staff Attorney, to Costle (Apr. 18, June 13, 1980) (Record, D-99, 100).

25/ 50 Fed. Reg. 1182 (Jan. 9, 1985). The January 1985 notice had two parts. First, it contained a final action withdrawing the 1977 proposal. The January notice also contained new proposals to change the 1976 standards; the effect of these changes is to weaken the 1976 standards' prohibition on preventable discharges from PVC reactors and other equipment, as well as their requirements for controlling leaks and for reporting of releases to EPA and the states. See Comments of Natural Resources Defense Council (Mar. 25, 1985). See also, (footnote continued)

The January 1985 notice first sets forth, in even starker terms than before, a strict cost-benefit test for standards under Section 112. The cost-benefit test is stated most explicitly in the notice's characterization of EPA's actions in 1976. It states: "The current [1976] VC standard was established based on judgments concerning the costs and benefits of the standard to society."[26/]

Not only does the January 1985 notice abandon the 1977 proposal, it even drops the minimum requirement for use of "best available control technology" articulated in the 1976 standard and states an even more demanding technological feasibility test. In 1976 EPA had stated that "best available control technology" would include measures in use elsewhere in the chemical industry, so long as they were "generally adaptable" to EDC/VC or PVC plants.[27/] In 1977 EPA had gone a step further by proposing to require the industry to improve the performance of existing control devices to levels that could reasonably be expected given a firm regulatory requirement and appropriate

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"E.P.A. Proposes Allowing Emissions of Cancer-Causing Substance," New York Times, Mar. 29, 1985, p. __ (An EPA official stated: "there will definitely be more vinyl chloride in the air and we will be able to take much fewer enforcement actions. . . . [T]he effect is a loosening of the regulations.").

This case challenges the final action withdrawing the 1977 proposal. This case does not involve the EDF v. EPA settlement agreement, because the agreement was technically satisfied when the 1977 proposal was issued, even though EPA finally repudiated the substance of the agreement. This case also does not involve the new proposals, since no final action has yet been taken on them.

26/ Id. at 1183 (col. 3).

27/ 40 Fed. Reg. 59534 (cols. 2-3) (1975).

leadtime.[28] In the withdrawal notice, however, EPA now asserts that before an emission limit may be established, the agency must show it has already been "consistently achieved" in the past at operating EDC/VC or PVC facilities.[29]

The notice then concludes that the amendments proposed in 1977 do not pass these cost-benefit and technological feasibility tests.[30] Because the amendments are no longer considered "appropriate," the notice continues, "the June 2, 1977, proposal is withdrawn."[31]

This petition for review followed.

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[28] 42 Fed. Reg. 28154 (col. 3) (1977). Cf. Natural Resources Defense Council v. EPA, 655 F.2d 318 (1981), cert. denied 454 U.S. 1017 (1981) (technology-forcing standards for diesel automobiles).

[29] 50 Fed. Reg. 1184 (col. 3).

[30] Id. at 1184-85 (dismissal of proposed reduction of the 10 ppm emission limit to 5 ppm, proposed 5 ppm emission limit for oxychlorination reactor, and proposed limits on content of residual vinyl chloride in PVC resins).

[31] Id. at 1183 (col. 2).

SUMMARY OF THE ARGUMENT

The Supreme Court and this Court have ruled that an agency charged with setting standards to protect public health from dangerous pollutants cannot engage in cost-benefit analysis or take technological or economic considerations into account unless the statute expressly so provides. American Textile Mfrs. Ass'n v. Donovan, 452 U.S. 490 (1981); Union Electric Co. v. EPA, 427 U.S. 246 (1976); Lead Industries Ass'n v. EPA, 647 F.2d 1130 (D.C. Cir. 1980), cert. denied 449 U.S. 1042 (1980).

Section 112 of the Clean Air Act and its legislative history demonstrate a specific and unqualified intention that the only factor which the Environmental Protection Agency (EPA) may consider when setting standards for hazardous air pollutants is protection of public health. Section 112(b)(1)(B) states that these standards must be set at the level which "provides an ample margin of safety to protect the public health." These words may not reasonably be read to make any factor other than health protection relevant to standard setting. They preclude EPA from compromising public health protection by employing cost-benefit and technological feasibility tests in standard setting.

The legislative history demonstrates unequivocally that Congress understood some pollutants may cause death or serious illness at any level of exposure. For such pollutants the legislative history shows Congress specifically intended EPA to set standards that will protect persons from illness or death even if that requires prohibiting emissions. Congress explicitly mandated such standards even if they cause facilities to close.

Interpreting the contemporaneous and closely parallel "adequate margin of safety" test in Section 109 of the Act, this Court has ruled that EPA may base standards on no factor other than protection of public health. Technological or economic feasibility may not be considered. Lead Industries Ass'n, supra. This Court reached the identical conclusion interpreting the "ample margin of safety" test as used in both Section 112 of the Clean Air Act and Section 307 of the Clean Water Act. Hercules, Inc. v. EPA, 598 F.2d 91 (D.C. Cir. 1978).

EPA is likely to argue that its contrary construction of Section 112 should be deferred to by this Court. But no deference is due if the statute and legislative history show that the intention of Congress is specific and clear. Chevron, U.S.A. v. Natural Resources Defense Council, 104 S.Ct. 2778 (1984). EPA asserts that Congress did not discuss how the Agency should regulate a pollutant which is hazardous to health at any level. This is flatly wrong. In this situation Congress specifically directed EPA to set standards which allow no measurable emissions.

EPA reaches the opposite conclusion, that it may employ cost-benefit and technological feasibility tests under Section 112, only by disavowing the traditional tools of statutory construction and reasoning backwards from its view of appropriate public policy. In its view, to preclude the agency from employing these tests would be unwise. Substituting its view of appropriate policy for that of Congress, EPA has seen fit to employ these tests anyway. But under our system of governm nt,

only Congress can change the law. TVA v. Hill, 437 U.S. 153 (1978); Lead Industries Ass'n, supra.

Because EPA has violated the mandate of Section 112 of the Clean Air Act to set standards for vinyl chloride that protect the public health with an ample margin of safety, the January 1985 withdrawal of the amendments to the standards proposed in 1977 must be vacated. In view of the hazard to public health, EPA's eight-year delay in taking action, and the 180-day statutory deadline for promulgating proposed standards, this Court should remand the proceedings to EPA with instructions to complete further rulemaking in accordance with law within 180 days of the issuance of the Court's mandate.

ARGUMENT

The Supreme Court has held: "When Congress has intended that an agency engage in cost-benefit analysis, it has clearly indicated such intent on the face of the statute." American Textile Mfrs. Inst. v. Donovan, 452 U.S. 490, 510 (1981). Likewise, construing the Clean Air Act itself, the Supreme Court stated: "Where Congress intended the Administrator to be concerned about economic and technological infeasibility, it expressly so provided." Union Electric Co. v. EPA, 427 U.S. 246, 257 n.5 (1976). And as this Court stated when it ruled that the closely parallel "adequate margin of safety" requirement in Section 109 of the Clean Air Act precludes considerations of technological or economic feasibility:

> [W]hen Congress directs an agency to consider only certain factors in reaching an administrative decision, the agency is not free to trespass beyond the bounds of its statutory authority by taking other factors into account. . . . A policy choice such as this is one which only Congress, not the courts and not the EPA, can make.

Lead Industries Ass'n v. EPA, 647 F.2d 1130, 1150 (D.C. Cir. 1980), cert. denied 449 U.S. 1042 (1980).[32/]

No provision for applying cost-benefit or technological feasibility tests can be found on the face of Section 112 or in its legislative history. To the contrary, the statutory text and the legislative history affirmatively show that no factor other

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32/ Cf. Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983) (A rule is "arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider. . . .").

than protection of public health is to affect the Administrator's decisionmaking when regulating hazardous air pollutants.

A. Section 112 Directs EPA to Consider No Factor Other Than Protection of Public Health

Section 112(b)(1)(B) directs EPA to set each hazardous air pollutant emission standard "at the level which in his judgment provides an ample margin of safety to protect the public health from such hazardous air pollutant." The exclusive focus of these words on protection of health is clear on their face. There is no word or phrase in this sentence which can reasonably be read to authorize EPA to qualify public health protection by considering economic or technological factors.

The "ample margin of safety" requirement is contemporaneous with and closely parallel to the "adequate margin of safety" test in Section 109(b)(1).[33/] That provision requires EPA to set health-based "primary national ambient air quality standards" at the level which is "requisite to protect the public health with an adequate margin of safety." After reviewing the "adequate margin of safety" requirement and its legislative history, this Court concluded:

> We are unable to discern here an congressional intent to require, or even permit, the Administrator to consider economic or technological factors in promulgating air quality standards.

Lead Industries Ass'n, supra, 647 F.2d at 1150. If there is any difference between the "ample margin of safety" and "adequate

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33/ 42 U.S.C. §7409(b)(1).

margin of safety" tests, it is that an even greater concern for protection of public health is mandated by Section 112.

The exclusive health focus intended for standards set under Section 112(b)(1)(B) is further emphasized by the remainder of Section 112. First, the term "hazardous air pollutant" itself is defined in words admitting of no other concern: A substance causing or contributing to air pollution "which may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness." Section 112(a)(1).

Second, the statute provides only one basis on which EPA may decline to set national emission standards: If it determines that the pollutant, after all, "clearly is not a hazardous air pollutant." Section 112(b)(1)(B). That inquiry is obviously limited to the public health protection factors relevant under the definition of a hazardous air pollutant quoted above.

Third, the statute specifically provides for limited consideration of economic and technological factors in the application of the standards to particular existing sources. Under Section 112(c)1)(A)(i), all new sources must comply with hazardous air pollutant standards from the moment they commence operating. Under Section 112(c)(1)(A)(ii), however, the Administrator may grant an existing source a waiver permitting up to two years of operation out of compliance with the hazardous air pollutant standard if he finds

> that such period is necessary for the installation of controls and that steps will be taken during the period of the waiver to

> assure that the health of persons will be protected from imminent endangerment.

Since Congress has explicitly limited consideration of technological or economic factors to existing sources only, and has explicitly limited the period of such waivers to a maximum of two years, there is no room for contending that EPA may give broader consideration to these factors in standard-setting itself.[34/]

B. The Legislative History Reinforces the Exclusive Health Focus of Section 112

The legislative history shows a specific, unqualified congressional intent that when developing hazardous air pollutant standards EPA should consider only what is required to protect public health and no other factor. Section 112 originated in 1970 in Section 115 of the Senate bill.[35/] Section 115(b) defined a hazardous air pollution agent in essentially identical terms as the final law -- as a substance

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[34/] Additional evidence that technological and economic factors may not be considered under Section 112 is found in the extreme care with which the term "feasible," as found in the 1977 amendments authorizing design or work practice standards, is defined. Under Section 112(e)(1), such a standard is permitted only if an emission standard (a standard directly limiting emission rates) is "not feasible." Under Section 112(e)(2), an emission standard is not feasible only (1) if it is technically impossible to convey the pollution through a centralized smokestack or vent, (2) if doing so would violate another law, or (3) if it is technologically or economically impracticable to measure (as opposed to control) the emissions in question. See note 3, supra. The care Congress took to limit the relevant considerations in this use of the term "feasible" underscores the limitation on considering economic or technological feasibility of controls when setting standards under Section 112(b)(1)(B).

[35/] S. 4358, §115, 91st Cong., 2d Sess. (1970) (as reported by the Senate Committee on Public Works), reprinted at 1 Leg. Hist. 565-69.

> whose presence, chronically or intermittently, in trace concentrations in the ambient air, either alone or in combination with other agents, will cause, or contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible damage to health.

The bill then required EPA[36] to set standards protecting public health and considering no other factor. Under Section 115(a)(2), within 180 days of listing such a pollutant, EPA was required to publish "a proposed prohibition of emissions of each such agent or combination of agents from any stationary source" (emphasis added). Within six months thereafter EPA was required to promulgate the prohibition, unless he found either (a) that the pollutant in fact was "not hazardous to the health of persons," or (b) "that a departure from such prohibition . . . will not be hazardous to the health of persons" (i.e., that the pollutant had a threshold below which it could be safely breathed). If the Agency made either of these findings, it was required to set emission limits in lieu of the prohibition.[37] The prohibition

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[36] The Senate and House bills, and the committee reports, actually referred to the Secretary of Health, Education, and Welfare, who, until the creation of EPA by executive reorganization later in 1970, was responsible for implementing federal air pollution control laws. For convenience, we refer to EPA as the implementing agency in discussing these bills and reports.

[37] If EPA found, under subparagraph (A), that the pollutant was not hazardous, then Section 115(a)(3) directed the Agency to set standards under Section 114 or the bill, which provided for standards for "selected agents" causing other, less severe, health effects. These standards, applicable to both new and existing sources, also were required to protect public health, although their effective date could be postponed for up to two years after promulgation. See 1 Leg. Hist. 560-65.

If EPA found, under subparagraph (b), that a departure from (footnote continued)

(or emission standards in the case these findings were made) became effective for both new and existing sources immediately on promulgation. Section 115(a)(6).

Describing Section 115 the Senate Report stated that EPA "would be required to publish a proposed prohibition of emissions of such agents or combination of such agents from any stationary source." The Report continued that the Administrator

> would be required to promulgate such prohibition, unless he found on the basis of a preponderance of the evidence that the air pollution agent was not, in fact, hazardous to the health of persons -- or that a greater than zero emission could be permitted without presenting a hazard to health."38/

Explaining these requirements to the full Senate, Senator Muskie, the Act's chief sponsor and floor manager, stated: "The committee was presented with strong evidence that any level of emissions of certain pollutants may produce adverse effects that cannot be tolerated."39/ It is hard to imagine a clearer intention that EPA consider health factors alone.

The House bill provided for a prohibition on emissions of "extremely hazardous" air pollutants from new sources. For pollutants which substantially endanger public health, EPA was to set performance standards for new sources; in setting these

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a prohibition on emissions would not be hazardous, then it was required to set a standard limiting emissions to levels that were not hazardous. Section 115(a)(4).

38/ S. Rep. No. 1196, 91st Cong., 2d Sess. 20 (1970), 1 Leg. Hist. 420 (hereinafter cited as "1970 Senate Report") (emphasis added).

39/ Cong. Rec. S16091 (daily ed. Sept. 21, 1970), 1 Leg. Hist. 227.

standards EPA was instructed to consider technological and economic factors. But Section 112(b)(1) of the bill stated:

> If such emissions are extremely hazardous to health, no new source of such emissions shall be constructed or operated, except where (and subject to such conditions as he deems necessary and appropriate) the [Administrator] makes a specific exemption with respect to such construction or operation.40/

Had it been enacted, of course, this language would have limited regulation of hazardous pollutants to new sources and would have allowed EPA to make specific exemptions from prohibitions, presumably on the basis of non-health considerations. But this bill was not enacted.

The final legislation fashioned by the Conference Committee followed the Senate bill, explicitly rejecting the authority proposed in the House bill to make exceptions based on non-health factors.41/ The final legislation also followed the Senate bill

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40/ H.R. 17255, §5 (proposing new §112(b)(1)), 91st Cong., 2d Sess. (1970) (as reported by the House Committee on Interstate and Foreign Commerce), 2 Leg. Hist. 921.

41/ It may be argued that by substituting the "ample margin of safety" test in place of the prohibition on emissions (barring findings that some emissions can be allowed without hazard), the final legislation somehow retreated from the exclusive public health focus of the Senate bill. Such an argument does not withstand analysis. As the Supreme Court has held, authority to consider cost-benefit or technological infeasibility arguments must be explicit on the face of the statute. American Textile Mfrs. Inst., supra; Union Electric Co., supra. And as shown above, on their face the words "ample margin of safety" cannot be read to admit of any concern other than protecting health.

Moreover, the Conference Committee consciously chose to employ an amplified version of the "adequate margin of safety" test in Section 109 of the Act, which originated in the Senate bill and which was clearly int nded to preclude technological and economic infeasibility arguments. See the legislative history of the "adequate margin of safety" test, traced in Lead Industries Ass'n, 647 F.2d at 1149-50 and quoted infra at 27-28.

in applying these health protection requirements to existing sources as well as new ones, with only three, specifically limited modifications: (a) the allowance of a 90-day delay in the effective date of a hazardous air pollutant standard as it applies to existing source, (b) the provision for a two-year waiver of compliance for specific existing sources, and (c) the provision for presidentially-granted national security waivers.[42/]

This legislative choice to exclude non-health factors from standard-setting was made most explicit by Senator Muskie, now the chairman of the Senate conferees, during Senate consideration of the final legislation. As he stated in the summary of the Conference Committee agreement presented to the Senate, the requirement to protect public health with an ample margin of safety "could mean, effectively, that a plant would be required to close because of the absence of control techniques. It could include emission standards which allowed for no measurable emissions."[43/] EPA may not void this legislative choice.

C. The Case Law Confirms That Non-Health Factors May Not Be Considered Under Section 112

As noted above, the Supreme Court has clearly held that authority for cost-benefit or technological feasibility tests

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42/ Section 112(c). See the Conference Report's description of the final legislation. H.R. Rep. No. 1783, 91st Cong., 2d Sess. 56-57 (1970), 1 Leg. Hist. 196-97 (hereinafter cited as "1970 Conference Report").

43/ Summary of the Provisions of Conference Agreement on the Clean Air Amendments of 1970, supra note 5.

must be explicit. American Textile Mfrs. Ass'n, supra; Union Electric Co., supra. Arguments for grafting such tests onto statutes which do not provide for them must be rejected. Tennessee Valley Authority v. Hill, 437 U.S. 153 (1978).

This Court has thrice held that EPA has no authority to consider non-health factors under "margin of safety" tests. In Hercules, Inc. v. EPA, 598 F.2d 91 (D.C. Cir. 1978), the Court held that the "ample margin of safety" requirement in Section 307(a) of the Clean Water Act[44/] (dealing with "toxic water pollutants") precludes consideration of feasibility factors. The opinion addresses Section 112 of the Clean Air Act in detail and concludes that it has the identical meaning. In Lead Industries Ass'n v. EPA, 647 F.2d 1130 (D.C. Cir. 1980), cert. denied 449 U.S. 1042 (1980), this Court held that technological and economic factors may not be considered under the "adequate margin of safety" test of Section 109(b)(1). Accord, American Petroleum Inst. v. Costle, 665 F.2d 1176 (D.C. Cir. 1981), cert. denied 455 U.S. 1034 (1982). Hercules and Lead Industries Ass'n are directly on point.

In Hercules, the Court stated that Section 307(a) of the Clean Water Act (like Section 112 of the Clean Air Act) lacks "any term commonly used to denote a feasibility consideration, e.g., feasibility, achievability, practicability, economic impact, or cost." 598 F.2d at 111. Refering to the Clean Air Act, the Court continued:

44/ 33 U.S.C. §1317.

> The legislative background explains why Congress focused on public and environmental protection, rather than discharge control technology, in the setting of toxic standards. The regulatory scheme is similar to that of the Clean Air Act Amendments of 1970, . . . which distinguish between pollutants subject to technology-based regulation under section 111, and hazardous substances, subject to health-based regulation under section 112. Recognizing that "certain pollutants" required special treatment because of risk to health, Congress enacted section 112, dealing with hazardous pollutants, without provision for considerations of feasibility.

598 F.2d at 112. The Court then specifically cited the remarks of Senator Muskie quoted supra at 22 & 24.[45/] The Court continued:

> [T]he congressional selection of factors is a legislative determination that the need of the public and the environment for protection from toxic chemicals is more important than the problems of stringent regulation. This congressional determination is a rational responsse to the dangers presented by toxic substances. The meaning of the statute being clear, it is not this court's prerogative to impose considerations of feasibility.

Id. (citing TVA v. Hill, 437 U.S. 153 (1978) and Union Electric Co. v. EPA, 427 U.S. 246 (1976)). Despite the fact that Hercules explicitly rejects the construction of Section 112 asserted by EPA in the vinyl chloride regulation, the Agency persists in following it.

In Lead Industries Ass'n, this Court rejected claims that technological or economic feasibility could be considered under the "adequate margin of safety" test in Section 109. Citing the

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45/ 1 Leg. Hist. 133, 227.

rule from Union Electric that authority to consider such factros must be explicit, the Court stated: "Section 109(b) speaks only of protecting public health . . . . Nothing in its language suggests that the Administrator is to consider economic or technological feasibility in setting ambient air quality standards." 647 F.2d at 1148-49. The Court then reviewed the legislative history buttressing that conclusion, noting especially the following passages from the 1970 Senate Report:

> The protection of public health -- as required by the national ambient air quality standards . . . -- will require major action throughout the Nation. Many facilities will require major investments in new technology and new processes. Some facilities will need altered operating procedures . . . Some may be closed.
>
> . . .
>
> In the Committee discussions, considerable concern was expressed regarding the use of the concept of technical feasibility as the basis of ambient air standards. The Committee determined that 1) the health of people is more important than the question of whether the early achievement of ambient air quality standards protective of health is technically feasible; and, 2) the growth of pollution load in many areas, even with application of available technology, would still be deleterious to public health.
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> The Report concluded:
>
> Therefore, the Committee determined that existing sources of pollution either should meet the standard of the law or be closed down, and in addition that new sources should be controlled to the maximum extent possible to prevent atmospheric emissions.

647 F.2d at 1149, quoting 1970 Senate Report at 2-3.[46/]

[46/] 1 Leg. Hist. 402-03.

The petitioners in that case claimed that a requirement to consider economic and technological feasibility could be found in the Senate Report's statement that: "Margins of safety are essential to any health-related environmental standards if a reasonable degree of protection is to be provided against hazards which research has not yet identified."47/ As quoted above, however, the Court could not discern "any congressional intent to require, or even permit, the Administrator to consider economic or technological factors in promulgating air quality standards." 647 F.2d at 1150. The Court added:

> [I]f there is a problem with the economic or technological feasibility of the lead standards, . . . [an affected party] must take its case to Congress, the only institution with the authority to remedy the problem.

Id. (footnote omitted).

EPA undoubtedly will argue that the Court should defer to its interpretation of Section 112. But no deference is due when, as here, the statutory terms and their legislative history show a clear congressional intent. "If a court, employing traditional tools of statutory construction, ascertains that Congress had an intention on the precise question at issue, that intention is the law and must be given effect." Chevron, U.S.A. v. Natural Resources Defense Council, 104 S.Ct. 2778, 2782, n.9 (1984). See American Methyl Corp. v. EPA, 749 F.2d 826, 833-34 (D.C. Cir. 1984). The threshold question whether congressional intention is clear is for the Court to decide; an agency cannot bootstrap its

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47/ 1970 Senate Report at 10, 1 Leg. Hist. 410.

way to deference by asking the Court to defer to its claim that the law is unclear. Deference does not even begin until the agency establishes the absence of congressional intent.[48]

EPA's argument for the absence of intention rests on the assertion that "Congress never discussed the particular problem associated with apparent non-threshold pollutants" -- pollutants with no known safe levels of exposure.[49] But this assertion is flatly wrong. The legislative history reviewed above shows that Congress clearly understood some pollutants are intolerably hazardous at any level of exposure. In this situation, Congress determined protection of the public health with an ample margin of safety required standards permitting no measureable emissions, even if that meant pollution sources would close. See the statements of Senator Muskie, quoted at pages 22 and 24 supra. Neither statement drew the slightest qualification from any member. There is, therefore, absolutely no predicate for a deference claim.

D. By Limiting the Factors EPA May Consider, Congress Promotes Both Better Pollution Control and More Democratic Decisionmaking

EPA's only remaining argument is that precluding administrative consideration of cost-benefit and technological feasibility factors is, in its view, not an appropriate public

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48/ Cf. Security Industry Ass'n v. Board of Governors of the Federal Reserve System, 104 S.Ct. 2979, 2983 (1984): "[D]eference is not to be a device that emasculates the significance of judicial review." See also Volkswagenwerk Aktiengesellschaft v. FMC, 390 U.S. 261, 272 (1968).

49/ 40 Fed. Reg. 59534 (col. 3) (1975) (original vinyl chloride proposal).

policy. EPA speculates, without any attempt having been made, that the vinyl chloride industry could never meet a no measurable emissions standard. Thus, EPA conjectures, enforcement of the law would cause the industry to close. Even though Congress contemplated just such a result when the public is exposed to a pollutant which is hazardous at any level of exposure, EPA overrides the law and substitutes a policy of cost-benefit analysis.

Apart from the fundamental legal proposition that in our system of government only Congress has the authority to change the law, TVA v. Hill, 437 U.S. at 194-95; Lead Industries, 647 F.2d at 1150, there are three persuasive answers to EPA's policy argument.

First, Congress does not share EPA's extraordinary technological pessimism. Unlike EPA, Congress knows better than to trust an industry's prediction of failure before an effort is even made. Counting on American technical ingenuity to produce remarkable results if made to focus on pollution control by standards that truly protect health, Congress chose a "technology-forcing" policy. In Section 112, as in other key parts of the Clean Air Act, Congress set high targets, often in advance of current technological capabilities, precisely in order to force the development and implementation of improved controls and substitute processes and products. As the Supreme Court noted in Union Electric:

> [T]he 1970 Amendments to the Clean Air Act were a drastic remedy to what was perceived as a serious and otherwise uncheckable problem of air pollution. . . .

> These requirements are of a "technology-forcing character" . . . and are expressly designed to forced regulated sources to develop pollution control devices that might at the time appear to be economically or technologically infeasible.

427 U.S. at 256-57.

Where it has been implemented, technology-forcing has paid off handsomely. Consider the case of automobile emission controls. In 1970 Congress set standards based on public health protection despite industry predictions that they could not be met. The standards were met. Consider another example, driven not by legislation but by tragedy. Just two weeks ago, DuPont announced a new process for the manufacture and use of methyl isocyanate ("MIC") -- the chemical which killed more than two thousand people in Bhopal, India, last December. MIC now can be continuously manufactured and converted into pesticides in a single closed system. There is no longer any need to make huge batches of the chemical at one plant, store them, and ship them to other plants for conversion to pesticides; there need never be more than two pounds of the substance present in the system. In a plant using this process, another Bhopal will be impossible.50/

EPA's assumption of failure cuts off the attempt to force technical innovation even before it starts. The vinyl chloride industry has never been placed in a situation where it must devote a real effort to eliminating emissions. EPA has not even

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50/ Washington Post, June 8, 1985, p. D-1. (The company spokesman said: "With our new process . . . the product is manufactured in a continuous, 'close-coupled' system that produces MIC and consumes it immediately. There is never more than two pounds of methyl isocyanate present in the system.")

required the industry to make full use of currently available controls. The Agency's own analyses contradict its official pessimism and show that vinyl chloride emissions from certain equipment already can be dramatically curbed[51] and that some emission points already can be made leak-free.[52] Even the

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51/ EPA's own background documents contradict the Agency's January 1985 withdrawal notice and show that the measures proposed in 1977 are feasible. For instance, the January notice rejects the proposed reduction in the vent emission limit from 10 ppm to 5 ppm, claiming the 5 ppm level has not been "consistently achieved." But according to EPA's principal background document:

° A series of incineration tests at one plant in Kentucky demonstrated VC levels consistently at 0.26 ppm or below, less than six percent of the proposed 5 ppm limit. EPA, Vinyl Chloride -- A Review of National Emission Standards, p. 4-8 (Record, A-25).

° A B.F. Goodrich solvent absorption system is reported to recover 99.99 percent of VC from exhaust vent streams. The Review states that the solvent is "proprietary, commercially available, inexpensive, and reported to be low in toxicity." Id. at 4-14 through 4-15.

° Tenneco has developed a process of reacting VC with ozone in the presence of activated carbon which reduces VC to less than 1 ppm from streams containing between 10 and 10,000 ppm VC. Id. at 4-16 through 4-17.

The January notice also dismisses the proposed requirement to incinerate exhaust from the oxychlorination vent at EDC/VC plants even though a memorandum from an EPA consultant reports that three of the four plants already incinerate the exhaust. Memo from K.K. Fidler, Radian Corp., to file, "Survey of Control Technology Used on Oxychlorination Vents at EDC/VC Plants" (Aug. 31, 1984) (Record, B-51).

52/ An estimated 109 megagrams per year (120 tons) of vinyl chloride still leaks from the hundreds of valves and other connections in the piping of a typical PVC plant. 50 Fed. Reg. 1184 (Table 1). Almost all emissions from valves could be eliminated, however, by using "sealed bellows" valves -- a commercially available design EPA has elsewhere concluded is essentially leak-free: "The main advantage of these valves is that they can be designed to withstand high temperatures and pressures so that leak-free service can be provided at operating temperatures beyond the limits of [conventionally-used] diaphram (footnote continued)

industry is more upbeat than EPA; as stated by the industry's representative during hearings before EPA's technical advisory committee: "Experience has shown that the industry has surpassed the expectation of the original standard in reducing vinyl chloride emissions."53/

The second response to EPA's argument is that for a policy of technology-forcing to really work, the power to relax the health-based requirement or extend the time for achieving it must rest with Congress, not EPA. Congress recognized that to make industries take these high targets seriously and make maximum efforts to meet them, the targets could not be easily changed by EPA. Rather, the credibility and efficacy of this strategy requires the industries to understand that relaxing the requirements would be difficult because Congress must be convinced to change the law. The importance of this is recognized in the concluding comments of the Supreme Court in Union Electric (specifically regarding the State Implementation Plan process, but equally applicable to Section 112):

> Allowing such claims [of economic and technological infeasibility] to be raised by appealing the Administrator's approval of an implementation plan . . . would frustrate congressional intent. It would permit a proposed plan to be struck down as infeasible before it is given a chance to work, even

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valves." See EPA, Benzene Fugitive Emissions -- Background Information for Proposed Standards, p. 4-19 (EPA-450/3-80-032a, Nov. 1980) (emphasis added).

53/ Statement of W.C. Holbrook, B.F. Goodrich Co., representing the Vinyl Institute, at the meeting of the National Air Pollution Control Techniques Advisory Committee (NAPCTAC) on Aug. 30, 1984. See NAPCTAC, Minutes of Meeting, August 29 and 30, 1984, at p. VII-24 (U.S. EPA, Oct. 1, 1984) (Record, B-50).

> though Congress clearly contemplated that some plans would be infeasible when proposed. . . . Technology forcing is a concept somewhat new to our national experience and necessarily entails some risks. But Congress considered those risks in passing the 1970 Amendments and decided that the dangers posed by uncontrolled air pollution made them worth taking.

427 U.S. at 268-69. As the vinyl chloride rulemaking demonstrates, it is all too easy to persuade EPA not to stick to its guns. The technology-forcing strategy was short-circuited the moment EPA first allowed technological feasibility and cost-benefit tests into the picture in 1975.

Yet Congress's door is open. Congress can adjust the law's requirements if, after the attempt to comply, a compelling case is made. As Senator Muskie stated regarding the automobile industry:

> I think that we have an obligation to lay down the standards and requirements of this bill.
>
> I think that the industry has an obligation to try to meet them. If, in due course, it cannot, then it should come to Congress and share with Congress -- the representatives of the people -- the need to modify that policy.[54/]

As stated by a noted commentator, William Rodgers:

> [EPA's] tendency to resist enforcement of the law as written on grounds of social catastrophe is not unknown in environmental legal circles. The position presupposes that a "better" policy choice or decision analysis requires a consideration of factors other than those specified legislatively. This may very well be true, but there is no reason why Congress cannot selectively allocate

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54/ Cong. Rec. S16093 (daily ed. Sept. 21, 1970), 1 Leg. Hist. 232.

> responsibilities for any "ideal" decision, charging EPA with making a health-based judgment but reserving for another agency or itself choices of utilitarian override. It is important to keep in mind that a dynamic, as opposed to a static theory of legislation would view an EPA "final" order anticipating shutdown of a source under Section 112 as simply one stage of an ongoing process that gives different answers to different questions at different times.[55]

The third response to EPA's argument follows from the second. If an industry has made the effort to eliminate its hazardous emissions, and if that effort does not succeed completely, the final decision what to do should rest with the people's elected representatives. Presented with an industry seeking relief from the requirements of Section 112, Congress can evaluate, case-by-case, whether the industry tried in good faith and with sufficient effort to curb its emissions. Congress can determine, in a particular case, whether an industry should be closed in order to protect public health, or whether protection of public health should be delayed or compromised to keep the industry going.

Placing this most sensitive determination in the hands of Congress, rather than EPA, promotes both greater protection of public health and greater political legitimacy for final decisions. Greater pollution control results because Congress will grant fewer exceptions from protection with an "ample margin of safety," and on stiffer terms, than will EPA. In particular instances, Congress will determine that public health concerns

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55/ W. Rodgers, Environmental Law (West Pub. Co., 1984 Supplement) at 161 (footnote omitted).

take precedence over an industry's claims. In other instances, Congress may decide the reverse. By contrast, under EPA's cost-benefit and technological feasibility tests, industries' claims always take precedence over protection of public health.

Greater political legitimacy results because the decisions are made by elected representatives, not by an agency bureaucracy. Both types of decisions -- to close an industry or to compromise public health protection -- are sensitive determinations with both pragmatic and moral consequences. It is precisely these decisions which in our system of government Congress best reserves, as it did in Section 112, to itself.

REQUEST FOR RELIEF

By employing cost-benefit and technological feasibility tests which are proscribed by the specific mandate of Section 112 of the Clean Air Act, EPA has violated law. The January 1985 withdrawal of the amendments proposed to the vinyl chloride standards in 1977 should be vacated, and the matter remanded to the Agency for further rulemaking proceedings in compliance with the law.

Because of the continuing hazard to public health from vinyl chloride emissions, and because of EPA's extraordinary delay in taking action on the 1977 proposal, this Court should establish a specific deadline completion of the proceedings on remand. The 1977 proposal languished within EPA for nearly eight years despite the deadline in Section 112(b)(1)(B) of 180 days for moving from proposal to promulgation of a hazardous air pollutant

standard. Meanwhile, more than 4.6 million people living near vinyl chloride-emitting facilities have been exposed to a potent human carcinogen in violation of the law. In view of the health hazard, the statutory deadline, and the history of delay, petitioner submits that this Court should order EPA to complete the rulemaking on remand no later than 180 days after the issuance of the Court's mandate.

In previous instances where EPA has coupled illegal action with long delay, this Court has issued judicial deadlines to govern action on remand. For example, in Sierra Club v. EPA, 719 F.2d 436 (D.C. Cir. 1983), cert. denied 104 S.Ct. 3571 (1984), this Court wrote:

> Congress thought EPA could solve all problems [to write tall stack regulations] in six months and the agency has had six years. We think it appropriate to direct EPA to promulgate new final regulations that remedy the defects this court has found within six months from the issuance of our mandate, the period originally specified by Congress.

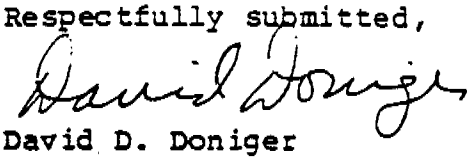
Id. at 469-70.[56/]

56/ See also, Sierra Club v. Gorsuch, 715 F.2d 653, 661 (D.C. Cir. 1983) (decision on strip mine regulation within 90 days); Public Citizen Health Research Group v. Auchter, 702 F.2d 1150, 1158-59 (D.C. Cir. 1983) (proposal of OSHA standard required within 30 days; promulgation "expected" within one year).

CONCLUSION

For the foregoing reasons, the January 1985 withdrawal of the amendments to the vinyl chloride standards proposed in 1977 should be vacated, and the proceeding should be remanded by EPA to complete rulemaking in accordance with the Clean Air Act within 180 days from the issuance of the Court's mandate.

Respectfully submitted,



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June 17, 1985

CERTIFICATE OF SERVICE

I hereby certify that on this 17th day of June 1985, I have served copies of the enclosed Brief for Petitioner by messenger to the respondents and counsel listed below.

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APPENDIX A

Clean Air Act §112, 42 U.S.C. §7412:

National emission standards for hazardous air pollutants

(a) Definitions

For purposes of this section—

(1) The term "hazardous air pollutant" means an air pollutant to which no ambient air quality standard is applicable and which in the judgment of the Administrator causes, or contributes to, air pollution which may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.

(2) The term "new source" means a stationary source the construction or modification of which is commenced after the Administrator proposes regulations under this section establishing an emission standard which will be applicable to such source.

(3) The terms "stationary source", "modification", "owner or operator" and "existing source" shall have the same meaning as such terms have under section 7411(a) of this title.

(b) List of hazardous air pollutants; emission standards; pollution control techniques

(1)(A) The Administrator shall, within 90 days after December 31, 1970, publish (and shall from time to time thereafter revise) a list which includes each hazardous air pollutant for which he intends to establish an emission standard under this section.

(B) Within 180 days after the inclusion of any air pollutant in such list, the Administrator shall publish proposed regulations establishing emission standards for such pollutant together with a notice of a public hearing within thirty days. Not later than 180 days after such publication, the Administrator shall prescribe an emission standard for such pollutant, unless he finds, on the basis of information presented at such hearings, that such pollutant clearly is not a hazardous air pollutant. The Administrator shall establish any such standard at the level which in his judgment provides an ample margin of safety to protect the public health from such hazardous air pollutant.

(C) Any emission standard established pursuant to this section shall become effective upon promulgation.

(2) The Administrator shall, from time to time, issue information on pollution control techniques for air pollutants subject to the provisions of this section.

(c) Prohibited acts; exemption

(1) After the effective date of any emission standard under this section—

(A) no person may construct any new source or modify any existing source which, in the Administrator's judgment, will emit an air pollutant to which such standard applies unless the Administrator finds that such source if properly operated will not cause emissions in violation of such standard, and

(B) no air pollutant to which such standard applies may be emitted from any stationary source in violation of such standard, except that in the case of an existing source—

(I) such standard shall not apply until 90 days after its effective date, and

(II) the Administrator may grant a waiver permitting such source a period of up to two years after the effective date of a standard to comply with the standard, if he finds that such period is necessary for the installation of controls and that steps will be taken during the period of the waiver to assure that the health of persons will be protected from imminent endangerment.

(2) The President may exempt any stationary source from compliance with paragraph (1) for a period of not more than two years if he finds that the technology to implement such standards is not available and the operation of such source is required for reasons of national security. An exemption under this paragraph may be extended for one or more additional periods, each period not to exceed two years. The President shall make a report to Congress with respect to each exemption (or extension thereof) made under this paragraph.

(d) State implementation and enforcement

(1) Each State may develop and submit to the Administrator a procedure for implementing and enforcing emission standards for hazardous air pollutants for stationary sources located in such State. If the Administrator finds the State procedure is adequate, he shall delegate to such State any authority he has under this chapter to implement and enforce such standards.

(2) Nothing in this subsection shall prohibit the Administrator from enforcing any applicable emission standard under this section.

(e) Design, equipment, work practice, and operational standards

(1) For purposes of this section, if in the judgment of the Administrator, it is not feasible to prescribe or enforce an emission standard for control of a hazardous air pollutant or pollutants, he may instead promulgate a design, equipment, work practice, or operational standard, or combination thereof, which in his judgment is adequate to protect the public health from such pollutant or pollutants with an ample margin of safety. In the event the Administrator promulgates a design or equipment standard under this subsection, he shall include as part of such standard such requirements as will assure the proper operation and maintenance of any such element of design or equipment.

(2) For the purpose of this subsection, the phrase "not feasible to prescribe or enforce an emission standard" means any situation in which the Administrator determines that (A) a hazardous pollutant or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal, State, or local law, or (B) the application of measurement methodology to a particular class of sources is not practicable due to technological or economic limitations.

(3) If after notice and opportunity for public hearing, any person establishes to the satisfaction of the Administrator that an alternative means of emission limitation will achieve a reduction in emissions of any air pollutant at least equivalent to the reduction in emissions of such air pollutant achieved under the requirements of paragraph (1), the Administrator shall permit the use of such alternative by the source for purposes of compliance with this section with respect to such pollutant.

(4) Any standard promulgated under paragraph (1) shall be promulgated in terms of an emission standard whenever it becomes feasible to promulgate and enforce such standard in such terms.

(5) Any design, equipment, work practice, or operational standard, or any combination thereof, described in this subsection shall be treated as an emission standard for purposes of the provisions of this chapter (other than the provisions of this subsection).

(July 14, 1955, c. 360, Title I, § 112, as added Dec. 31, 1970, Pub.L. 91-604, § 4(a), 84 Stat. 1685, and amended Aug. 7, 1977, Pub.L. 95-95, Title I, §§ 109(d)(2), 110, Title IV, § 401(c), 91 Stat. 701, 703, 791; Nov. 9, 1978, Pub.L. 95-623, § 13(b), 92 Stat. 3458.)

National Emission Standards for Vinyl Chloride, 40 C.F.R. Part 61, Subpart F (1976):

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 4.07 m^3 (1100 gal).

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29006, June 7, 1977]

§ 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 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.

(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 contains or contacts either a liquid that is at least 10 percent by weight vinyl chloride or a gas that is at least 10 percent by volume vinyl chloride.

(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 production which follows ethylene dichloride formation and in which finished ethylene dichloride is produced.

(p) "Vinyl chloride purification" includes any part of the process of vinyl chloride production which follows vinyl chloride formation and in which finished vinyl chloride is produced.

(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).

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29006, June 7, 1977]

§ 61.62 Emission standard for ethylene dichloride plants.

(a) Ethylene dichloride purification: The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from any equipment used in ethylene dichloride purification is not to exceed 10 ppm, 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.

(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 0.2g/kg (0.0002 lb/lb) of the 100 percent ethylene dichloride product from the oxychlorination process.

[42 FR 29006, June 7, 1977]

§ 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 all exhaust gases discharged to the atmosphere from any equipment used in vinyl chloride formation and/or purification is not to exceed 10 ppm, 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 requirment 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 all exhaust gases discharged to the atmosphere from each reactor is not to exceed 10 ppm, 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 (0.00002 lb vinyl chloride/lb) of polyvinyl chloride product, with the product determined on a dry solids basis. This requirement applies to any vessel which is used as a reactor or as both a reactor and a stripper. In the bulk process, 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 action that was taken to prevent the discharge, and measures adopted to prevent future discharges.

(b) *Stripper.* The concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from each stripper is not to exceed 10 ppm, 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 all exhaust gases discharged to th atmosphere 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, 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 all exhaust gases discharged to the atmosphere from each monomer recovery system is not to exceed 10 ppm, 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:

(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 (0.002 lb/lb) 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 (0.0004 lb/lb) 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.

§ 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.* Except for an emergency relief discharge, 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, 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 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, 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, 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.

(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.

(4) *Leakage from relief valves.* Vinyl chloride emissions due to leakage from each relief valve on equipment in vinyl chloride service are to be minimized by installing a rupture disk between the equipment and the relief valve, by connecting the relief valve discharge to a process line or recovery system, or equivalent as provided in § 61.66.

(5) *Manual venting of gases.* Except as provided in § 61.64(a)(3), all gases which are manually vented from equipment in vinyl 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; or equivalent as provided in § 61.66.

(6) *Opening of equipment.* Vinyl chloride emissions from opening of equipment (including loading or unloading lines that are not opened to the atmosphere after each loading or unloading operation) are to be minimized as follows:

(i) Before opening any equipment for any reason, the quantity of vinyl chloride is to be reduced so that the equipment contains no more than 2.0 percent by volume vinyl chloride or 0.0950 m^3 (25 gal) of vinyl chloride, whichever is larger, at standard temperature and pressure; and

(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, 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, and sampling techniques are to be such that sample containers in vinyl chloride service are purged into a closed process system.

(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 formal leak detection and elimination program. The owner or operator shall submit a description of the program to the Administrator for approval. The program is to be submitted within 45 days of the effective date of these regulations, unless a waiver of compliance is granted under § 61.11. If a waiver of compliance is granted, the program is to be submitted on a date scheduled by the Administrator. Approval of a program will be granted by the Administrator provided he finds:

(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.

(ii) It includes a reliable and accurate portable hydrocarbon detector to be used routinely to find small leaks and to pinpoint the major leaks indicated by the vinyl chloride monitoring system. A portable hydrocarbon detector means a device which measures hydrocarbons with a sensitivity of at least 10 ppm and is of such design and size that it can be used to measure emissions from localized points.

(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.

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

(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) *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 dis-

place 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, 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 (1,250 gal) in volume for which an emission limit is prescribed in § 61.65(b)(6)(i) prior to opening the equipment and using Test Method 106, a portable hydrocarbon detector, or an equivalent or alternative method. The method of measurement is to meet the requirements in § 61.67(g)(5)(i)(A) or (g)(5)(i)(B).

[41 FR 46564, Oct. 21, 1976; 41 FR 53017, Dec. 3, 1976, as amended at 42 FR 29006, June 7, 1977]

§ 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. For an existing source, any request for using an equivalent method as the initial measure of control is to be submitted to the Administrator within 30 days of the effective date. For a new source, any request for using an equivalent method is to be submitted to the Administrator with the application for approval of construction or modification required by § 61.07.

§ 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 2 years records of emission test results and other data needed to determine emissions.

(g) Unless otherwise specified, the owner or operator shall use test 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 equivalent method or an alternative method has been approved by the Administra-

tor. If the Administrator finds reasonable grounds to dispute the results obtained by an equivalent or alternative method, he may require th use of a reference method. If the results of the reference and equivalent or 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 equivalent or alternative is withdrawn.

(1) Test 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 is § 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 be taken over a minimum of one hour, and is to contain a minimum volume of 50 liters corrected to standard conditions.

(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 than 10 percent oxygen the concentration of vinyl chloride as determined by Test Method 106 is to be corrected to 10 percent oxygen (dry basis) for determination of emissions by using the following equation:

$C_{c\ (corrected)} = C_c\ 10.9/20.9 - \text{percent } O_2$

where:

$C_{c\ (corrected)}$ = The concentration of vinyl chloride in the exhaust gases, corrected to 10-percent oxygen.
C_c = The concentration of vinyl chloride as measured by Test 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 Reference Method 3 in 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 in kg/100 kg product are to be determined by using the following equation:

$$C_{sr} = [C_c(2.60)\ Q\ 10^{-6}]\ [100]/Z$$

where:

C_{sr} = kg vinyl chloride/100 kg product.
C_c = The concentration of vinyl chloride as measured by Test Method 106.
2.60 = Density of vinyl chloride at one atmosphere and 20° C in kg/m³.
Q = Volumetric flow rate in m³/hr as determined by Reference Method 2 of Appendix A to Part 60 of this chapter.
10^{-6} = Conversion factor for ppm.
Z = Production rate (kg/hr).

(2) Test Method 107 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) Where a stripping operation is used to attain the emission limit in § 61.64(e), emissions are to be determined using Test Method 107 as follows:

(i) The number of 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 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 f 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) Test 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) Test 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). The mass of vinyl chloride in kg/100 kg product in each inprocess wastewater stream is to be determined by using the following equation:

$$C_{kr} = [C_v R 10^{-4}] [100]/Z$$

where:

C_{kr} = kg vinyl chloride/100 kg product.
C_v = the concentration of vinyl chloride as measured by Test Method 107.
R = water flow rate in 1/hr, determined in accordance with a method which has been submitted to and approved by the Administrator.
10^{-4} = Conversion factor for ppm.
Z = Production rate (kg/hr), determined in accordance with a method which has been submitted 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. For a reactor that is also used as a stripper, the determination may be made immediately following the stripping 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:

$$C = W(2.60)(10^{-6})(Cb)/YZ$$

where:

C = kg vinyl chloride emissions/kg product.
W = Capacity of the reactor in m^3.
2.60 = Density of vinyl chloride at one atmosphere and 20° C in kg/m^3.
10^{-6} = Conversion factor for ppm.
C_b = ppm by volume vinyl chloride as determined by Test Method 106 or a portable hydrocarbon detector which measures hydrocarbons with a sensitivity of at least 10 ppm.
Y = Number of batches since the reactor was last opened to the atmosphere.
Z = Average kg of polyvinyl chloride produced per batch in the number of batches since the reactor was last opened to the atmosphere.

(A) If Method 106 is used to determine the concentration of vinyl chloride (Cb), 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 (Cb), 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) 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.

(Sec. 114, Clean Air Act as amended (42 U.S.C. 7414))

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29007, June 7, 1977; 43 FR 8800, Mar. 3, 1978]

§ 61.65 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 air sampels from one or more points on a continuous sequential basis and analyzes the samples with gas chromotography 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 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 5.2.1 and 5.2.2 of Test Method 106 and in accordance with section 7.1 of Test 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 preparati n, certified vinyl chlorid 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 sections 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.

(Sec. 114, Clean Air Act as amended (42 U.S.C. 7414))

[41 FR 46564, Oct. 21, 1976; 41 FR 53017, Dec. 3, 1976, as amended at 42 FR 29007, June 7, 1977; 43 FR 8800, Mar. 3, 1978]

§ 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.

(Sec. 114, Clean Air Act as amended (42 U.S.C. 7414))

[41 FR 46564, Oct. 21, 1976, as amended at 43 FR 8800, Mar. 3, 1978]

§ 61.70 Semiannual report.

(a) 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 by this section. The first semiannual report is to be submitted following the first full 6 month reporting period after the initial report is submitted.

(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 equivalent or an alternative method has been approved by the Administrator. If the Administrator finds reasonable grounds to dispute the results obtained by an equivalent or alternative method, he may require the use of a reference method. If the results of the reference and equivalent or 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 equivalent or alternative is withdrawn.

(1) The owner or operator shall include in the report a record of any emissions which averaged over any hour period (commencing on the hour) are in excess of the emission limits prescribed in §§ 61.62(a) or (b), § 61.63 (a), or § 61.64 (a)(1), (b), (c), or (d), or 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), (b)(2), (b)(5), (b)(6)(ii), or (b)(9)(ii). The emissions are to be measured in accordance with § 61.68.

(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. Test Method 107 is to be used to determine vinyl chloride content as follows:

(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 quantity of material processed by the 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 wner or operator shall provid duplicates of the samples required in paragraphs (c)(2)(i) and (c)(2)(ii) of this section.

(v) The report to the Administrator by the owner or operator is to include the vinyl chloride content found in each sample required by paragraphs (c)(2) (i) and (c)(2)(ii) of this section, averaged separately for each type of resin, over each calendar day and weighted according to the quantity of each grad of resin processed by the stripper(s) that calendar day, according to the following equation:

$$A_{T_i} = \frac{\sum_{i=1}^{n} P_{G_i} M_{G_i}}{Q_{T_i}} = \frac{P_{G_1} M_{G_1} + P_{G_2} M_{G_2} + \cdots + P_{G_n} M_{G_n}}{Q_{T_i}}$$

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; $i = 1.2 \ldots m$ 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_n.
n = Total number of grades of resin produced during the 24-hour period.

(vi) The owner or operator shall retain at the source and make available for inspection by the Administrator for a minimum of 2 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 the emissions from each reactor opening for which an emission limit is 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. For a reactor that is also used as a stripper, the determination may be made immediately following the stripping operation.

(Sec. 114, Clean Air Act as amended (42 U.S.C. 7414))

[41 FR 46564, Oct. 21, 1976; 41 FR 53018, Dec. 3, 1976, as amended at 42 FR 29007, June 7, 1977; 43 FR 8800, Mar. 3, 1978]

§ 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 two 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.

(Sec. 114, Clean Air Act as amended (42 U.S.C. 7414))

[41 FR 46564, Oct. 21, 1976, as amended at 42 FR 29007, June 7, 1977; 43 FR 8800, Mar. 3, 1978]

Notice of Proposed Amendments to the Vinyl Chloride Standards (1977):

ENVIRONMENTAL PROTECTION AGENCY

[40 CFR Part 61]

[FRL 728-5]

VINYL CHLORIDE

National Emission Standards for Hazardous Air Pollutants

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule.

SUMMARY: The proposed amendments are being made to the vinyl chloride standard which has promulgated October 21, 1976, and would apply to new and existing ethylene dichloride, vinyl chloride, and polyvinyl chloride plants. The standard and the proposed amendments implement the Clean Air Act and are based on the Administrator's determination that vinyl chloride is a hazardous air pollutant. The intended effect of the proposed amendments is to require improved effectiveness of control technology at existing plants, impose more stringent emission limits on new sources, and prohibit an emission increase within the vicinity of an existing source due to the construction of a new source.

DATES: Comments must be received on or before August 1, 1977.

ADDRESSES: Comments should be submitted (preferably in triplicate) to the Emission Standards and Engineering Division, Environmental Protection Agency, Research Triangle Park, North Carolina, Attention: Mr. Don R. Goodwin.

All public comments received may be inspected and copied at the Public Information Reference Unit (EPA Library), Room 2922, 401 M Street, SW., Washington, D.C.

FOR FURTHER INFORMATION CONTACT:

Don R. Goodwin, Emission Standards and Engineering Division, Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Telephone No. 919-688-8146, ext. 271.

SUPPLEMENTARY INFORMATION:

Background

On October 21, 1976, EPA promulgated a standard for vinyl chloride under the authority of section 112(b)(1)(B) of the Clean Air Act, as amended (41 FR 46561). The standard applies to ethylene dichloride, vinyl chloride, and polyvinyl chloride plants.

On November 19, 1976, the Environmental Defense Fund (EDF) petitioned the United States Court of Appeals for the District of Columbia Circuit to review the standard. Motions to intervene were subsequently filed on behalf of the Society of the Plastics Industry, Inc., the Goodyear Tire and Rubber Company and Air Products and Chemicals, Inc., and were granted by order of the Court on January 18, 1977. On March 24, 1977, EDF and EPA moved to dismiss the proceedings in view of a settlement agreement requiring EPA to take certain additional actions. These include a restatement of EPA's policy for regulating carcinogens under section 112 of the Clean Air Act; the proposal of amendments which would require increased efficiency of existing control equipment, require more stringent control at new sources, and prohibit increases in emissions within the vicinity of an existing source due to new construction; and the initiation of a review of the vinyl chloride standard three years after the promulgation of the amendments.

Zero Emission Goal

The vinyl chloride standard has been criticized for allegedly placing unwarranted emphasis on technological rather than health considerations. Although EPA disagrees with this criticism, it seems appropriate to restate EPA's approach to the regulation of carcinogens in general and under Section 112 of the Clean Air Act, and to explain how the vinyl chloride standard and the proposed amendments are consistent with this approach and with the protection of public health.

On May 25, 1976, EPA published interim procedures and guidelines for health risk and economic impact assessments of suspected carcinogens (41 FR 21402), which define EPA's approach to regulatory action for suspect carcinogens. As indicated in that publication, there are two steps involved in the decision-making process with regard to the regulation of a potential carcinogen. Although different EPA statutory authorities impose different requirements, in general two decisions must be made with regard to each potential carcinogen. The first decision is whether a particular substance constitutes a cancer risk. The second decision is what regulatory action, if any, should be taken to reduce that risk.

In deciding whether a cancer risk exists, EPA will consider a substance a presumptive cancer risk when it causes a statistically significant excess incidence of benign or malignant tumors in humans or animals. In the case of vinyl chloride, EPA evaluated all available data and concluded that a cancer risk exists. In deciding how and whether to regulate, EPA examined section 112 of the Clean Air Act. Section 112 of the Act requires that emission standards be set "at the level which in the judgment of the Administrator provides an ample margin of safety to protect the public health from such hazardous air pollutants." This requirement appears to assume that each pollutant regulated will have a threshold level of effects below which no health effects will occur. As explained in the documentation for the current standard (40 FR 59532, December 24, 1975; 41 FR 46560, October 21, 1976), it has not been possible to determine if there is a threshold level of effects for vinyl chloride and it is not certain that such a threshold may be determined in the near future. In the absence of strong evidence to the contrary, then, the only level of vinyl chloride which would appear to be absolutely protective of health is zero, which may be achievable only by banning vinyl chloride emissions completely. That, in turn, would require closing the entire industry. As explained in the earlier rulemaking it is not clear that Congress would have intended this result, so instead EPA required the lowest level achievable using technological means. (See 40 FR 59534 and 41 FR 46562).

In order to insure that the standard continues to approach the only level of emissions which is known to be absolutely protective of health, namely zero emissions, EPA is proposing amendments which require more efficient use of existing control technology at existing plants and more effective controls at new plants, and which encourage technology to reach this goal without banning vinyl chloride.

More Stringent Standards for Existing Sources

EPA is proposing amendments which would require sources presently subject to a 10 ppm emission limit to reduce emissions to 5 ppm within three years of promulgation of the amendments. The affected sources include ethylene dichloride purification; vinyl chloride formation and purification; reactors, strippers; mixing, weighing, and holding containers; monomer recovery systems; and fugitive emissions which have been captured in accordance with the existing regulation.* If the owner or operator of a source believed that a control system would not be capable of meeting th 5 ppm limit, he would be able to request that the Administrator approve an interim emission limit for that source. Such requests would have to be made one year before the compliance date. In requesting an interim emission limit, the owner or operator would have to submit supportive data and meet with EPA to discuss his particular problems in attaining compliance. The meeting would be announced in the FEDERAL REGISTER and any interested party would be allowed to attend and submit written or oral comments. If an interim emission limit were granted to the source, the required emission level would be specified in a written notification from EPA and in the FEDERAL REGISTER. Each source granted an interim emission limit would be reviewed every three years to determine whether emissions could be reduced to 5 ppm, or at least to a lower interim emission limit.

In proposing the reduction from 10 to 5 ppm, it is not EPA's intent that a control system which has been installed to

*As an explanatory note, paragraph (b) of § 61.65 contains nine fugitive emission regulations. For several of these, the fugitive emissions are required to be captured and ducted to a control device meeting 10 ppm. According to the proposed amendments, the emissions from this control device would have to be reduced to 5 ppm in the same way any other source currently required to meet 10 ppm would have to do. Rather than incorporating both the 5 and 10 ppm emission limits in each paragraph in § 61.65(b), a separate paragraph (c) containing these emission limits is being added to § 61.65. All the other paragraphs in (b) are cross-referenced in paragraph (c).

meet the 10 ppm emission limit be removed and replaced with another more efficient control system or that a second control system be added behind the first control system. The purpose of the proposed amendment is to force owners and operators to maximize the effectiveness of existing control systems.

More Stringent Standards for New Sources

The proposed amendments would also require more stringent controls for new sources; i.e., sources for which construction is commenced after the date of proposal of these amendments. According to § 61.02 of the General Provisions, "commenced" means that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

New sources of types which would be subject to the 10 ppm emission limit under the current standard would be required under the amendments to meet a 5 ppm emission limit at the time of startup. With new sources there would be no provision allowing requests for EPA approval of an interim emission limit. New sources would be required to meet the more stringent emission limit at the time of startup, because they have an opportunity to design their equipment to meet the 5 ppm emission limit at the time construction is commenced. Existing sources, on the other hand, require time to maximize the effectiveness of their control systems.

The proposed amendment would also require ethylene dichloride-vinyl chloride plants to control emissions from new oxychlorination reactors to 5 ppm. This requirement is based on installation of a recycling and oxygen feed system with an incinerator or equivalent control device. The current standard limits emissions from the oxychlorination reactor to 0.2 g/kg (0.0002 lb/lb) of the 100 percent ethylene dichloride product from the oxychlorination reactor. This emission limit can be met by changing process parameters, rather than installing a control device. During the development of the current standard EPA considered requiring existing sources to control emissions with an incinerator or equivalent technology, but rejected this approach because a large quantity of fuel would be required to reduce emissions from a relatively small source. An existing oxychlorination reactor typically has a large volume, low hydrocarbon effluent gas stream, and large quantities of supplemental fuels would be required for combustion of its emissions.

A new plant can reduce the volume of its effluent gas stream and make it more concentrated by recycling the gas stream and using oxygen instead of air to feed into the process. (3, 4) the current standard was not based on this technology because it was not considered feasible to retrofit existing plants so that they could use oxygen instead of air. The recycling and oxygen feed methodology is considered feasible for new oxychlorination reactors because it can be incorporated at the time of construction. Since the use of this technology would eliminate the supplemental fuel problem referred to above, it is EPA's judgment that new oxychlorination reactors should be controlled to the same extent that is proposed for other emission sources.

The proposed amendment also includes a more stringent emission limit for new polyvinyl chloride resins being processed in equipment following the stripping operation. That is, the amendment would apply to resins for which production for the purpose of marketing was commenced after the proposal of the amendment. The amendment would require all new resins except new dispersion resins to be stripped to 100 ppm and new dispersion resins to be stripped to 500 ppm. These limits for new products would be one-fourth of the limits contained in the standard for existing products. Consistent with the current standard, the amendment would permit the use of control devices rather than stripping technology to meet the emission limit. In this case equipment being used to process all new resins except new dispersion resins would have to be controlled to 0.01 kg/kg product and the equipment used for new dispersion resins would have to be controlled to 0.05 kg/kg product.

A "new source" is defined in 40 CFR 61.02 as a stationary source, the construction or modification of which is commenced after proposal of a standard. There was some question based on this definition as to whether the amendment to the stripping standard for new sources should apply to new polyvinyl chloride resins or the installation of new equipment following the stripper. If the applicability of the amendment for new sources were based on the installation of new equipment following the stripper, it would be difficult to determine what constitutes a new source at an existing plant. This is based on the reasoning that the stripping standard requires that all equipment following the stripper in the process be controlled as a unit. The series of equipment following the stripper includes pumps and conveying equipment which might be expected to be replaced on a frequent and routine basis. Replacing one of these pieces of equipment would in effect cause the whole series of equipment following the stripper to have to meet the standard for new sources. In other words, all resins processed in the series of the equipment would have to meet the lower standard even though only a minor part of the equipment had been replaced.

EPA decided that a more reasonable and direct approach was to make the proposed amendment apply to the production of new polyvinyl chloride resins. This is based on the reasoning that emissions from the equipment following the stripper are a function of the amount of vinyl chloride left in the resin after the stripping operation is completed; i.e., the resin is the source of the emissions rather than the equipment. The same equipment can be used to process different resin grades. Variations in the emissions from the equipment are a function of the resin being processed rather than the characteristics of the equipment. The control technology which is used for the equipment following the stripper is likewise more directly linked to the resin than the equipment. Stripping is used to control the emissions due to the vinyl chloride in the resin before the resin is processed in the equipment.

Before the hazards of vinyl chloride became known, stripping technology was employed by polyvinyl chloride manufacturers to recover raw materials for economic purposes. As a result of a standard promulgated by the Occupational Safety and Health Administration (39 FR 35890), some companies investigated improvements in stripping methodology for emission control purposes. (1)

Optimum stripping consists of a set of operating conditions which must be developed experimentally on an individual basis for the many resins. In developing the current standard, EPA recognized that stripping technology for dispersion resins had not been refined to the same extent as it had been for other resins and that there was more difficulty in stripping dispersion resins than other resins. For this reason a less stringent emission limit was established for dispersion resins. Dispersion resins are permitted a higher emission limit under the proposed amendment for the same reason.

EPA believes that for some resins, companies have already developed stripping technology which would meet the proposed amendment. (2) For other resins, the proposed standard would require additional improvement in stripping technology. If stripping technology has not been developed to the extent necessary to meet the proposed amendment for a particular resin, the manufacturer would have the option of developing the technology or not producing the resin.

The current standard, unlike the proposed amendment, was not based on the premise that an owner or operator would have the option of not producing a particular resin. It is EPA's judgment that the owner or operator making a new product has more freedom of choice than the owner or operator already making a particular product in selecting those resins which are to be produced; EPA's standard would be included in the variables under consideration when decisions are being made as to which resins are to be produced.

The proposed amendment would apply to any new source, whether it constituted replacement of an existing source in an existing plant, the expansion of an existing plant, or part of an entirely new plant. That is, if a new oxychlorination reactor or a new polyvinyl chloride reactor were installed at an existing plant, it would be subject to the emission limits for new sources. This means that as existing sources are gradually replaced with new sources in an existing plant,

the overall emission level from that existing plant would be reduced.

Emission Offset

Because the present vinyl chloride standard focuses on reducing emissions rather than attaining a particular ambient air quality concentration, there is no provision for limiting the size of plants or the clustering of plants in a geographical area. The doubling of the size of an existing plant or the construction of a new plant beside an existing plant would considerably increase the ambient air concentrations of vinyl chloride in the vicinity of the plant(s) even if the vinyl chloride standard was met. EPA determined at the time of promulgation of the current standard that the costs of prohibiting the production of vinyl chloride and polyvinyl chloride were too high and the continued operation of existing plants should be allowed. EPA believes, however, that the standard should include a mechanism for prohibiting an increase in ambient concentrations of vinyl chloride due to new construction in areas where existing sources are already located.

Accordingly, EPA is proposing an amendment which would prohibit an increase in emissions within 8 kilometers (km) (approximately five miles) of an existing source due to the construction of a new emission source. This means that if a new source were added to an existing plant, the increase in emissions due to that new source would have to be offset by a reduction in emissions from other existing sources within that plant or at other plants within 8 km of the construction site of the new source. Similarly, a new plant could not be constructed within 8 km of an existing plant(s) unless the emission increase due to the new plant were offset by an emission reduction at the existing plant or plants. This provision may result in few existing plants being expanded and few new plants being constructed in the vicinity of existing plants. However, the proposed amendment does not preclude this possibility.

The offset provision would apply only to new construction which results in an increase in production rate. Replacing or adding equipment such as pumps, compressors, agitators, sampling equipment and unloading hoses is a routine practice at existing plants. Additions of equipment of this nature would, in and of itself, be expected to result in little, if any, increase in emissions. In EPA's judgment, a plant should not be required to prove this fact each time one of these pieces of equipment is added. The addition of this type of equipment in conjunction with major process equipment, however, is likely to result in both an increase in emissions as well as an increase in production rate, and is therefore covered by the offset provision.

If the offset provision were adopted, the reduction in emissions could be achieved in the production rate of an existing source or sources. The baseline emission rate would be determined based on the maximum production rate which had been attained by each existing source. The allowable emission rate for each source would be based on the maximum production rate at which that source would be operated in the future.

Also, if the emissions from an existing source were already below the emission limit applicable to it, the proposed amendment would give the source credit for the difference between the emission limit and the actual emission level. That is the baseline emission rate would be based on the standard rather than on an emission test. It is EPA's judgment that this is a more equitable approach than penalizing a source which has already taken measures to reduce emissions below the standard. Such a source would have less room for further reducing emissions.

The emission limits applicable to both the existing and new sources involved in the offset arrangement would be contained in the approval of new construction granted by the Administrator under 40 CFR 61.08.

EPA believes that a policy of no net increase in emissions due to new construction is justified because of the hazardous nature of vinyl chloride. However, EPA recognizes the potential difficulties in implementing such a policy and interested persons are urged to submit comments and factual information relating to this policy.

Review of Standard

EPA plans to undertake a full-scale review of Subpart F of 40 CFR Part 61 beginning three years from the promulgation of any amendments. In the study EPA will review information concerning technological advances in the control of vinyl chloride emissions to determine what further changes might then be appropriate to move toward the goal of zero vinyl chloride emissions. EPA will also consider recent health data to determine whether the approach for regulating vinyl chloride should be altered.

Environmental Impact

The proposed amendment, in contrast to the current standard, would encourage the development of new technology and improvements in existing technology and would have the following three positive environmental impacts: (1) further reduction of emissions at existing plants, (2) no increase in emissions within 8 km of an existing source, and (3) lower emissions from new sources than would be accomplished through the current standard regardless of the construction site. These environmental impacts would provide progress toward the ultimate goal of zero emissions without banning vinyl chloride, and in the process would provide additional protection of public health by further minimizing the health risks to the people living in the vicinity of existing plants and to any additional people who are exposed as a result of new construction.

Specifically, for those existing sources which are currently subject to a 10 ppm emission limit, emissions would be reduced by half within three years after the promulgation date of these amendments. At both an existing average-sized ethylene dichloride-vinyl chloride plant and an existing average-sized polyvinyl chloride plant, which contain other sources than the ones required to meet a 5 ppm emission limit, it is estimated this will have the effect of reducing total emissions by less than one percent. Emissions at existing plants would be further reduced as existing oxychlorination reactors are replaced with new oxychlorination reactors and as new polyvinyl chloride resins are produced to replace existing ones.

Under the proposed amendment, emissions from new plants would be considerably lower than they would be under the current standard. For a typical new average-sized ethylene dichloride-vinyl chloride plant (318×10^6 kg/yr or 700×10^6 lb/yr produced), the hourly emissions would be 5.1 kg (11.5 lb) instead of 10.3 kg (23.1 lb). For a typical new average-sized dispersion polyvinyl chloride plant (46×10^6 kg/yr or 100×10^6 lb/yr production), the emissions would be about 9 kg/hr (20 lb/hr) instead of 17.5 kg/hr (39 lb/hr) and for a typical new average-sized suspension polyvinyl chloride (68×10^6 kg/yr or 150×10^6 lb/yr production) the emissions would be 13.5 kg/hr (30 lb/hr) instead of 16 kg/hr (36 lb/hr). These emissions are calculated based on the emission factors published in the documentation for the existing standard. [4] Ambient air concentrations are expected to be reduced proportionately.

The only negative environmental impact would be an increase in hydrogen chloride emissions at ethylene dichloride-vinyl chloride plants if incineration were used to control emissions from new oxychlorination reactors. However, due to the corrosion problems which would otherwise occur on plant property and in the community, plants are expected to use scrubbers to control the hydrogen chloride emissions. The proposed amendment is not expected to have a significant impact on energy consumption.

Economic Impact

The potential economic impacts of the proposed standard are:

(1) Costs for research and development of improved methodology for operation of existing control technology so that it can be used to meet the 5 ppm emission limit.

(2) Costs for research and development of improved stripping techniques to meet the standard for new polyvinyl chloride resins.

(3) Cost of research and development or licensing for converting over to the oxygen system for a new oxychlorination reactor.

(4) Possibly increased transportation costs of raw materials in the case that the offset policy results in the construction of a new plant farther from an existing plant than it otherwise would have been.

(5) Costs of building a new plant more than 8 km from an existing plant in the event that the offset requirement precluded the expansion of an existing plant.

(6) Delay in the production of a particular resin due to time spent developing stripping technology for that resin.

(7) No growth in the production of a particular resin due to the inability to strip that resin to required levels.

The types of costs which have been named would be difficult to quantify. The costs would be expected to vary considerably from one plant to another depending on the amount of research and development than had already been done, the extent to which technology could be transferred from other plants and processes, and the plans for new construction.

One area in which cost estimates can be generated is the use of an oxygen-recycle oxychlorination process as opposed to an air-based system. The proposed amendment does not require the use of the oxygen-recycle system, but many plants would be expected to employ this system to avoid the high costs of incinerating the high volume gas stream from a typical air-based system. The primary cost of using the oxygen-recycle system is the cost of the oxygen itself. The cost of the oxygen for a particular plant would depend on whether the plant was located where there is a considerable demand for both the oxygen and nitrogen products of air separation. According to one recent article, if it is assumed that such a demand exists, the cost of the oxygen ($14.34/ton) would be approximately equivalent to the cost of compressing air for use in the air-based system. (1) Another report in which this assumption was not made and the economics of the air and oxygen systems were being compared, it was concluded that overall production economics "favor the oxygen process even if vent gas incineration would not be required for an air-based plant since the sum of all remaining advantages offered by oxygen-based plant operation more than outweighs the incremental cost for the oxygen feed." (2)

Miscellaneous: The Administrator invites comments on all aspects of the proposed amendments.

(Section 112 of the Clean Air Act, sec. 4(a) of Pub. L. 91-604, 84 Stat. 1685 (42 U.S.C. 1857c-7) and section 301(a) of the Clean Air Act, sec. 2 of Pub. L. No. 90-148, 84 Stat. 504 as amended by sec. (15)(c)(2) of Pub. L. 91-604, 84 Stat. 1713 (42 U.S.C. 1857 g(a)). Secs. 61.67 and 61.68 also proposed under the authority of section 114 of the Clean Air Act, as added by sec. 4(a) of Pub. L. 91-604, 84 Stat. 1687 and amended by Pub. L. 93-319, sec. 6(a)(4), 88 Stat. 259 (42 U.S.C. 1857c-9).)

NOTE.—The Environmental Protection Agency has determined that this document does not contain a major proposal requiring preparation of an Economic Impact Analysis under Executive Orders 11821 and 11949 and OMB Circular A-107.

Dated: May 27, 1977.

DOUGLAS M. COSTLE,
Administrator.

REFERENCES

(1) *Standard Support and Environmental Impact Statement: Emission Standard for Vinyl Chloride*, EPA-450 12-75-009, October, 1975.

(2) "Goodrich Reports Impressive Progress in Solving Vinyl Chloride Problem," *American Paint and Coatings Journal*, Vol. 60, No. 31, January 12, 1976, p. 24.

(3) E. W. Wimer and R. L. Feathers, "Oxygen Gives Low Cost VCM," *Hydrocarbon Processing*, March 1976, pp. 81-84.

(4) Peter Reich, "Air or Oxygen For VCM?," *Hydrocarbon Processing*, March 1976, pp. 85-89

It is proposed that Subpart F of 40 CFR Part 61 be amended as follows:

1. In § 61.08, paragraph (b) is revised to read as follows:

§ 61.08 Approval by the Administrator.

* * * * *

(b) If the Administrator determines that a stationary source for which an application pursuant to § 61.07 was submitted will not, if properly operated, cause emissions in violation of the standard or violation of § 61.73, he will approve the construction or modification of such source.

* * * * *

2. Section 61.62 is revised to read as follows:

§ 61.62 Emission standard for ethylene dichloride plants.

An owner or operator of an ethylene dichloride plant shall comply with the requirements of this section and § 61.65.

(a) Ethylene dichloride purification: Except as provided in § 61.65(a), the concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from any equipment used in ethylene dichloride purification is not to exceed the appropriate emission limit as follows:

(1) Each source for which construction had commenced on or before (date of proposal of these amendments), 10 ppm until (date three years after promulgation of these amendments) and 5 ppm after (date three years after the promulgation of these amendments).

(2) Each source for which construction commenced after June 2, 1977, 5 ppm.

(b) Oxychlorination reactor: Except as provided in § 61.65(a), emissions of vinyl chloride to the atmosphere are not to exceed the appropriate emission limit as follows:

(1) Each source for which construction had commenced on or before (date of proposal of these amendments), 0.2 g/kg (0.0002 lb/lb of the 100 percent ethylene dichloride product from the oxychlorination reactor.

(2) Each source for which construction commenced after June 2, 1977, 5 ppm.

(c) The requirements of this section do 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.

3. Section 61.63 is revised to read as follows:

§ 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: Except as provided in § 61.65(a), the concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from any equipment used in vinyl chloride formation and or purification is not to exceed the appropriate emission limit as follows:

(1) Each source, for which construction had commenced on or before June 2, 1977, 10 ppm until (date three years after promulgation of these amendments) and 5 ppm after (date three years after promulgation of these amendments).

(2) Each source for which construction commenced after June 2, 1977, 5 ppm.

(b) The requirements of this section do 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. Section 61.64 is amended by revising paragraphs (a)(1), (b), (c), (d) and (e) and by adding paragraph (f) 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:

(1) Except as provided in paragraph (a)(2) of this section and § 61.65(a), the concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from each reactor is not to exceed the appropriate emission limit as follows:

(i) Each source for which construction had commenced on or before June 2, 1977 10 ppm until (date three years after promulgation of these amendments) and 5 ppm after (date three years after promulgation of these amendments).

(ii) Each source for which construction commenced after June 2, 1977, 5 ppm.

* * * * * *

(b) Stripper: Except as provided in § 61.65(a), the concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from each stripper is not to exceed the appropriate emission limit as follows:

(1) Each source for which construction had commenced on or before June 2, 1977 10 ppm until (date three years after promulgation of these amendments) and 5 ppm after (date three years after final promulgation of these amendments).

(2) Each source for which construction commenced after June 2, 1977, 5 ppm.

(c) Mixing, weighting, and holding containers: Except as provided in § 61.65(a), the concentration of vinyl chloride in all exhaust gases discharged to the atmosphere 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 the appropriate emission limit as follows:

(1) Each source, for which construction had commenced on or before (date

of proposal of these amendments), 10 ppm until (date three years after promulgation of these amendments) and 5 ppm after (date three years after promulgation of these amendments).

(2) Each source for which construction commenced after June 2, 1977, 5 ppm.

(d) Monomer recovery system. Except as provided in § 61.65(a), the concentration of vinyl chloride in all exhaust gases discharged to the atmosphere from each monomer recovery system is not to exceed the appropriate concentration as follows:

(1) Each source for which construction had commenced on or before (date of proposal of these amendments), 10 ppm until (date three years after promulgation of these amendments) and 5 ppm after (date three years after promulgation of these amendments).

(2) Each source for which construction commenced after June 2, 1977, 5 ppm.

(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] 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.

(1) In polyvinyl chloride plants using stripping technology to control vinyl chloride emissions:

(i) For a grade or grades of polyvinyl chloride resin which have been produced by the plant on or before June 2, 1977, the weighted average residual vinyl chloride concentration in all the grades processed through the stripping operation on each calendar day, measured immediately after the stripping operation is completed, may not exceed the appropriate emission limit as follows:

(A) 2,000 ppm for polyvinyl chloride dispersion resins, excluding latex resins;

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

(ii) For a grade or grades of polyvinyl chloride resin which have not been produced by the plant on or before June 2, 1977, the weighted average residual vinyl chloride concentration in all the grades processed through the stripping operation on each calendar day, measured immediately after the stripping operation is completed, may not exceed the appropriate emission limit as follows:

(A) 500 ppm for polyvinyl chloride dispersion resins, excluding latex resins;

(B) 100 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:

(i) For sources being used to process a grade or grades of polyvinyl chloride resin all of which had been produced by the plant on or before June 2, 1977:

(A) 2 g/kg (0.003 lb/lb) 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;

(B) 0.4 g/kg (0.004 lb/lb) product from the stripper(s) (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.

(ii) For sources being used to process any grade of polyvinyl chloride resin not produced by the plant on or before June 2, 1977:

(A) 0.5 g/kg (0.0005 lb/lb) 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;

(B) 0.1 g/kg (0.0001 lb/lb) 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.

(f) The requirements of paragraphs (b), (c), and (d) of this section do 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.

5. Section 61.65 is amended as follows:

A. By replacing the phrase "10 ppm" with the phrase "the appropriate emission limit specified in § 61.65(c)" in paragraphs (b)(1)(ii), (b)(2), (b)(3)(i), (b)(3)(ii), (b)(3)(iii), (b)(3)(iv), (b)(3)(v), (b)(5), (b)(6)(ii), and (b)(9)(ii);

B. By revising paragraph (c) and adding paragraph (d) as set forth below.

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

* * * * *

(c) The emission limit which is not to be exceeded is as follows: (1) Each source, for which construction had commenced on or before June 2, 1977, 10 ppm until (date three years after promulgation of these amendments) and 5 ppm after (date three years after promulgation of these amendments).

(2) Each source for which construction commenced after June 2, 1977, 5 ppm.

(d) 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 m³ (1250 gal) in volume for which an emission limit is prescribed in § 61.65(b)(6)(i) prior to opening the equipment and using Test Method 106, a portable hydrocarbon detector, or an equivalent or alternative method. The method of measurement is to meet the requirements in § 61.67(g)(5)(i)(A) or (g)(5)(i)(B).

6. In § 61.67, paragraph (a) is revised to read as follows:

§ 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 as follows:

(1) For an existing source or a new source which has an initial startup date preceding October 21, 1976:

(i) Within 90 days following October 21, 1976, and

(ii) For those sources subject to §§ 61.62(a); 61.63(a); 61.64 (a)(1), (b), (c), and (d); and/or 61.65(b)(1), (b)(2), (b)(3), (b)(5), (b)(6), and/or (b)(9), within 90 days following (date three years after the promulgation date of these amendments).

(2) For a new source for which initial startup occurs after October 21, 1976, within 90 days of startup.

* * * * *

7. In § 61.68, paragraph (c) is revised to read as follows:

§ 61.68 Emission monitoring.

* * * * *

(c) A daily span check is to be conducted for each vinyl chloride monitoring system used. For all of the sources listed in paragraph (a) of this section, except for the one for which an emission limit is prescribed in § 61.62(b)(1), the daily span check is to be conducted with a concentration of vinyl chloride equal to the concentration emission limit applicable to it. For a source subject to the emission limit prescribed in § 61.62(b)(1), 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:

* * * * *

8. A new § 61.72 is added to read as follows:

§ 61.72 Request for interim emission limit.

(a) If in the opinion of the owner or operator of an existing source, that source will be unable to comply with the 5 ppm emission limit in §§ 61.62(a)(1); 61.63(a)(1); 61.64 (a)(1)(i), (b)(1), (c)(1), (d)(1); and or 61.65(c)(1) on or before (date three years after promulgation of these amendments), the owner or operator of that source may request that the Administrator approve an interim emission limit for that source. The request is to be in writing and is to be submitted to the Administrator within six months prior to (date two years after promulgation of these amendments). The request is to include:

(1) The reasons the source is incapable of being in compliance with the 5 ppm emission limit and data to support those reasons, and

(2) A suggested interim emission limit and description of the methodology for attaining that limit.

(b) Any owner or operator of a source who has submitted to the Administrator a written request for an interim emission limit in accordance with § 61.72(a), shall within 60 days of the date of the written request meet with the Administrator concerning the information contained in the request. The meeting is to be open to interested persons, who are to be allowed to submit oral or written testimony relevant to compliance of the source.

(c) The Administrator will within 120 days of receipt of the written request required by paragraph (a) of this section, notify the owner or operator in writing of approval or denial of approval of an interim emission limit.

(d) If an interim emission limit is approved the notification is to include the level of the interim emission limit, which may be the level requested or a more stringent one.

(e) A determination to deny approval of an interim emission limit is to set forth the specific grounds on which such denial is based.

(f) Approval for any interim emission limit granted for any source under § 61.72(c) shall expire three years from the date of issuance. The owner or operator may request an extension of approval for an interim emission limit or a lower interim emission limit. The request is to be in writing, is to be submitted within six months prior to a year before the expiration date and is to include the information listed in § 61.72 (b), (c), (d), and (e) are to apply.

9. A new § 61.73 is added to read as follows:

§ 61.73 Offset of emissions due to new construction.

(a) No owner or operator is to construct a new source which alone or in combination with other sources being constructed at the same time results in an increased production rate unless he demonstrates to the Administrator's satisfaction that such construction will not cause an increase in vinyl chloride emissions within 8 km of any other source which is subject to this subpart.

(b) Reduction in production rate is an allowable mechanism for attaining an offset in emissions.

(c) The baseline emission rate is to be determined based on the level of emissions allowable by the standard.

(d) Reducing emissions from an interim emission limit to the standard for a source is not an acceptable means of achieving an emission offset.

(e) In the application for approval of construction required by § 61.07, owners or operators of sources subject to this subpart shall include, in addition to the information required by § 61.07, the following information:

(1) The name, address, and location of any plant subject to this subpart which is located within 8 km of the proposed location of the source to be constructed.

(f) The emission limits applicable to both the new source(s) and the source(s) at which emissions are being reduced to balance the increase in emissions due to the new construction are to be established by the Administrator in the approval for construction required by § 61.08.

(Secs. 112 and 301(a) of the Clean Air Act, sec. 4(a) of Pub. L. No. 91-604, 84 Stat. 1683; sec. 2 of Pub. L. No. 90-148, 81 Stat. 504 (42 U.S.C. 1855c-7, 1857g(a)). Secs. 61.67 and 61.68 also issued under sec. 114 of the Clean Air Act, sec 4(a) of Pub. L. No. 91-604, 84 Stat. 1687 (42 U.S.C. 1857c-9).)

[FR Doc.77-15672 Filed 6-1-77;8:45 am]

Notice Withdrawing Amendments Proposed in 1977:

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 61

[AD-FRL-2707-4]

National Emission Standards for Hazardous Air Pollutants; Vinyl Chloride

AGENCY: Envoronmental Protection Agency (EPA).

ACTION: Proposed rule and notice of public hearing.

SUMMARY: The current emission standard for vinyl chloride (VC) was promulgated under Section 112 of the Clean Air Act in 1976. A review of the technological basis and administrative aspects of the standard has been completed, and the conclusions of the review are presented in this notice. The conclusions are the basis for this action which (1) proposes administrative and clarifying revisions to the standard and (2) announces decisions pertaining to other aspects of the current standard. This notice also withdraws proposed revisions to the current standard which were published in the Federal Register on June 2, 1977 (42 FR 28154).

If requested, a public hearing will be held to provide interested persons an opportunity for oral presentations of data, views, or arguments concerning the proposed revisions to the current standard.

DATES: *Comments.* Comments must be received on or before March 25, 1985.

Public Hearing. If anyone contacts the EPA requesting to speak at a public hearing by January 30 1985, a public hearing will be held on February 28, 1985 beginning at 9:00 a.m. Persons interested in attending the hearing should call Ms. Shelby Journigan at (919) 541-5578 to verify that a hearing will occur.

Request to Speak at Hearing. Persons wishing to present oral testimony must contact EPA by January 30, 1985.

Incorporation by Reference. The incorporation by reference of certain publications in these standards will be approved by the Director of the Federal Register as of the date of the final rule.

ADDRESSES: *Comments.* Comments should be submitted (in duplicate if possible) to: Central Docket Section (A-130), Attention Docket Number A-81-21, U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, D.C. 20460.

Public Hearing. If anyone contacts the EPA requesting to speak at a public hearing by January 30, 1985, the public hearing will be held at EPA Auditorium, corner of Highway 54 and Alexander Drive, Research Triangle Park, North Carolina. Persons interested in attending the hearing should call Ms. Shelby Journigan at (919) 541-5578 to verify that a hearing will occur. Persons wishing to present oral testimony should notify Ms. Shelby Journigan, Standards Development Branch (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541-5578.

Background Information Document. The general findings of the review study are documented in "Vinyl Chloride—A Review of National Emission Standards", EPA-450/3-82-003 (NTIS-PB 84-114354), available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161. The major technical analysis for the review study is contained in a separate document which may be obtained from the U.S. EPA Library (MD-35), Research Triangle Park, North Carolina 27711, telephone number (919) 541-2777. Please refer to "Vinyl Chloride: Relief Valve Discharge Standard," EPA-450/3-85-002, for the technical document.

Docket. Docket No. A-81-21, containing supporting information used in developing the proposed standard, is available for public inspection and copying between 8:00 a.m. and 4:00 p.m., Monday through Friday, at EPA's Central Docket Section, West Tower Lobby, Gallery 1, Waterside Mall, 401 M Street, SW., Washington, D.C. 20460. A reasonable fee may be charged for copying.

FOR FUTHER INFORMATION CONTACT: Mr. Robert E. Rosensteel or Mr. Leslie B. Evans, (919) 541-5671, concerning technical aspects of the industry and control technologies, and Mr. Fred Dimmick or Mr. Gilbert H. Wood, (919) 541-5578, concerning regulatory decisions. The address for these contacts is Emission Standards and Engineering Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

SUPPLEMENTARY INFORMATION:

Summary of Revisions to Current Standard

Revisions. Several administrative changes are being proposed as a result of a review of the national emission standard for VC. No major revisions are being proposed to the standard. As with the current standard for VC, the revisions are being established under Section 112 of the Clean Air Act. The significant administrative revisions include: (1) Reformatting the emission limit for relief valve discharges, (2) providing a compliance test procedure and a specific emission limit for operators who perform stripping operations in reactors, and (3) specifying requirements for leak detection and repair programs for certain equipment in VC service. Additional minor administrative changes to the standard are being proposed and are explained later in this premable.

Summary of Health, Environmental, Energy, and Economic Impacts. Since no major revisions to the standard are being proposed, the impacts resulting from the current standard remain generally unchanged. In 1975, it was estimated that emissions of VC from plants producing ethylene dichloride (EDC), VC monomer and polyvinyl chloride (PVC) would be reduced from 96,000 Mg/yr to 4,910 Mg/yr under the current standard, representing an emission reduction of 91,000 Mg/yr of VC (or 95 percent of VC emissions). Emissions of volatile organic compounds (VOC) and EDC are also reduced under the standard.

The estimated risks attributed to exposure to VC from EDC/VC and PVC plants in operation prior to the current standard were 5.5 cases per year for liver angiosarcoma and 11 cases per year for all cancers. Th risks attributed to exposure to VC from sources under the current standard have been estimated to be 0.28 cases per year for liver angiosarcoma and 0.55 cases per year for all cancers.

In 1975, the estimated capital cost for existing plants to meet the VC standard was $198 million, of which $15 million was for EDC and VC monomer plants and $183 million was for PVC plants. The EPA estimated that the annualized cost (including capital amortization, etc.) to these plants to maintain the required emission levels would be $70 million per year.

Background

The VC standard was proposed on December 24, 1975 (40 Fr 59532), and promulgated on October 21, 1976 (41 Fr 46559). It is applicable to plants producing EDC by the reaction of oxygen and hydrogen chloride with ethylene, plants producing VC by any process, and plants producting one or more polymers containing any fraction of VC. These plants are subject to different requirements at numerous VC emission points in the manufacturing process. These requirements include numerical emission limits, equipment specifications, and work practices.

The standard was designed to minimize the health risks associated

with VC by requiring reasonable control measures. As stated in the preamble to the proposed standard (40 Fr 59532, December 24, 1975), there is no known threshold level of effects for VC. Therefore, th only approach that would eliminate health risks associated with VC would ban its production and use. This approach was not selected. Rather, an approach was selected to minimize the health risks associated with VC by use of reasonable control measure.

On November 19, 1976, the Environmental Defense Fund (EDF) petitioned the United States Court of Appeals for the District of Columbia Circuit to review the standard. On March 24, 1977, the EDF and the EPA moved to dismiss the proceedings on the basis of a settlement agreement requiring the EPA to propose amendments which would require increased efficiency of existing control equipment, require more stringent control of new sources, and prohibit increases in emissions within the vicinity of an existing source due to new construction. The preamble to the proposed amendments was to state that the EPA's policy for regulating carcinogens under Section 112 of the Clean Air Act would include a general goal of eliminating emissions of carcinogens and that the EPA would initiate a review of the VC standard 3 years after the promulgation of the amendments.

On June 2, 1977, the amendments were proposed (42 FR 28154). Many comments pertaining to policy, technological feasibility, and procedural aspects of the proposed amendments were received. Review of these comments indicated that additional technical data and cost information were required before the proposed amendments, or revisions of the proposed amendments, could be promulgated.

Meanwhile, the EDF filed a petition with the EPA requesting the establishment of a comprehensive program for regulating airborne carcinogens under Section 112 of the Clean Air Act. The aspects of the EDF's petition concerning the development of standards under Section 112 were similar to those proposed in the June 2, 1977, amendments to the VC standard. Based on the similarity of the proposed amendments and the EDF's requested comprehensive program for regulating airborne carcinogens, the EPA believed that it should not take final action on the proposed VC amendments until after it had acted on the EDF's petition.

On October 10, 1979 (44 FR 58642), the EPA proposed "Policy and Procedures for Identifying, Assessing, and Regulating Airborne Substances Posing a Risk of Cancer." This proposal addressed several issues which were central to the proposed VC amendments. It also articulated the EPA's conclusion that Section 112 does not express an intent to eliminate totally all risks from emissions of airborne carcinogens. The EPA's selection of the level of control for a hazardous air pollutant emission standard would not be based on a policy that requires zero emissions of carcinogens. This policy is consistent with the basis for other recent actions under Section 112. For example, standards for benzene from coke ovens and leaks from equipment components in benzene service are not based on a zero emissions policy but rather on a reasonable level of control, which considers emissions and health risks.

The EPA believes it is not appropriate to leave the proposed amendments to the VC standard in effect or to promulgate amendments based on the proposed amendments. Therefore, the June 2, 1977, proposal is withdrawn. As described in the following section of this notice, the EPA began a review study to obtain additional technical data and cost information and to determine whether other amendments to the standard are needed. New amendments developed as a result of the review study are proposed in this notice.

Review of VC Standard

Early in 1980 the EPA began a review of the VC standard. The primary purpose of the review was to investigate the adequacy and appropriateness of the standard in light of policy decisions, health studies, control technology developments, and enforcement and compliance experience which have occurred since the standard was first promulgated. The review consisted of a screening study of: (1) Existing and new control technologies, (2) sources not regulated by the standard, and (3) enforcement and compliance experience since promulgation of the standard. Information and data evaluated during this study were obtained through literature searches, plant visits, and interviews with industrial representatives and EPA regional personnel involved in enforcement and surveillance of the VC-emitting industries. The information and data are presented in a document that may be obtained as described in the ADDRESSES section of this preamble. Decisions based on this review are summarized in the next two sections of this preamble.

As another aspect of the review of the VC standard, the EPA's Carcinogen Assessment Group reviewed new health studies that have become available since the standard was promulgated. This review included a study of the estimated carcinogenic strength of VC (the VC unit risk number) and focused on whether this number should be changed to reflect new information. Since the current standard was promulgated, new occupational studies have confirmed qualitatively that liver and brain cancer incidence are associated with population exposure to atmospheric VC. However, none of these new studies have sufficient exposure information to warrant a refinement of the quantitative cancer risk estimate.

Findings and Conclusions of the Review Study

The findings and conclusions of the VC review study are presented in th following subsections. The first subsection discusses the need and basis for the current standard. The second subsection addresses the level of control required by the current standard. The third subsection identifies source categories not covered by the current standard and evaluates the appropriateness of regulating these sources.

(1) Need and Basis for Current Standard

The current VC standard was established based on judgments concerning the costs and benefits of the standard to society. The standard is not designed to eliminate VC exposure risk entirely. Rather, it strikes a balance between public health protection and the cost of that protection. Data (evaluated before the current standard was established) strongly indicate that VC causes or contributes to the development of angiosarcoma, other cancers, and various noncarcinogenic disorders in people with occupational exposure and in animals with experimental exposure to VC. Although no dose-response data are available at the concentrations of VC found in the ambient air, the EPA concluded when the standard was established that any atmospheric concentration of VC poses some public heath risk. To eliminate the risk of VC exposure entirely, a complete prohibition of all VC emissions would be necessary. This would require the closure of the entire industry and result in serious, adverse economic impacts. Furthermore, the EPA concluded at the time the current standard was established that a complete prohibition of all VC emissions would not be desirable or necessary. The EPA

concluded this in view of (1) the beneficial uses of VC products for which desirable substitutes are not readily available; (2) the potential adverse health and environmental impacts associated with VC substitutes that have not been throughly studied; (3) the number of employees, particularly in fabrication industries, who would become at least temporarily unemployed; and (4) the availability of control technology that is capable of substantially reducing emissions of VC into the atmosphere.

Although all EDC, VC and PVC plants have now incorporated VC emission controls, the maintenance of a Federal standard for VC is still considered necessary. The VC standard contains requirements for the proper operation and maintenance of control devices and the proper implementation of work practices. These requirements reflect an appropriate balance between the need to minimize health risks and the avoidance of unreasonable economic and community impacts which would result from standards designed to reduce risks to zero. Relative to the initial control costs, the additional cost of maintaining and implementing the Federal VC standard is small. Nevertheless, if the Federal standard is discontinued, these small costs may be sufficient to provide the industry with an economic incentive for discontinuing the use of proper control measures. Thus, the continued maintenance of Federal standards for the control of VC is necessary to ensure a continuation of the current level of control. Additionally, the standard is important for the control of VC emissions from plants built in the future. The consequence of not maintaining a Federal standard would be to increase the carcinogenic risk to large segments of the population. (In 1975 when the standard was originally proposed, approximately 4.8 million people lived within a 5-mile radius of EDC, VC and PVC plants.) Accordingly, the EPA has concluded that the maintenance of the Federal standard for VC, or reasonable revision of the standard, is appropriate.

(2) Review of Technology-Based Level of Control

This subsection describes the status of the technology-based level of control for sources covered by the current standard. The present status of emissions from sources covered by the current VC standard is presented in Table 1.

TABLE 1. STATUS OF CURRENT EMISSION LEVELS FROM SOURCES COVERED BY THE VINYL CHLORIDE NESHAP

Emission source	Standard	Emissions (mg/yr)	
		Uncontrolled (prior to 1975)	Controlled (current levels)
Emissions from a model 240,000 mg/yr EDC/VC facility			
Primary control	10 ppmv	910	3.2
Oxychlorination vent	0.2 g/kg EDC product	114	39
Fugitive	Work practices and equipment standards	570	28
Relief valve	Nonrecoverable gas discharge only	Not Available	2.1
Emissions from a model 65,000 mg/yr PVC facility			
Primary control	10 ppmv	255	0.7
Reactor opening	0.002 kg/100 kg PVC product	312	1.4
Contained sources after vessel stripping	400 ppm concentration	650	27
Fugitive	Work practices and equipment standards	1,040	109
Relief valve	Nonrecoverable gas discharge only	130	2.4

[1] Based on the EPA emissions estimation developed from data submitted by industrial sources prior to promulgation of the 1975 VC standards.
[2] Represents estimated emissions from EDC/VC and PVC plants meeting current standards.
[3] Data were not collected on relief valve discharges from EDC/VC plants prior to 1975.
[4] Based on the EPA emissions estimates for a typical suspension plant. Emission estimates for bulk, latex, and dispersion plants are not presented here.

10 ppmv Standard. Emission sources covered by this standard include EDC purification and VC monomer formation and purification equipment, monomer recovery systems and other equipment at PVC plants, and vents from fugitive emission capture systems. The standard is based primarily on the control of these emissions by incineration or other primary control devices and specifies an emission limit of 10 parts per million by volume (ppmv) of VC averaged over a 3-hour period. The 10 ppmv standard applies to control device bypass streams.

One of the amendments proposed in 1977 would have required reduction of the emission limit from 10 to 5 ppmv. The goal of the proposed 5 ppmv limit was to ensure that the standard continued to approach a "zero emission goal" by requiring owners and operators both to maximize the effectiveness of existing control systems and to design improved new control systems at the time of construction. The 5 ppmv limit was not based on data for control technology different from that analyzed at the time of the promulgation of the 10 ppmv limit.

Comments received on the proposed 1977 amendments stated that in order to meet a limit of 5 ppmv, a control device would have to be capabl of control at a level even lower than 5 ppmv to offset emission fluctuations. Commenters also stated that a change from 10 to 5 ppmv would result in little reduction in mass emissions of VC. Finaly, commenters questioned the rationale of the "zero emission goal" policy.

Because the proposed 5 ppmv emission limit was not based on data from a control technology different from that analyzed for the current standard and because 10 ppmv represents the lowest level of control which has been consistently achieved, the EPA withdraws the proposed 5 ppmv limit and affirms the original 10 ppmv limit. If such a technology had been identified, it could have been the basis of a revised standard. However, during the review study no more advanced technology was identified, even though additional data on incinerators, carbon adsorbers, and solvent absorption control systems on existing plants were obtained. Although these data indicate that incinerators are capable of reducing emissions below 10 ppmv, 10 ppmv represents the lowest level of control which has been consistently achieved. Based on this information, the EPA has concluded that there is no improved or new control technology that has been demonstrated to significantly and consistently reduce emissions to a level below that required by the current standard. Therefore, no further technological investigation of the 10 ppmv standard is planned.

Oxychlorination Vent Standard—0.2 g/kg EDC. The current oxychlorination vent standard of 0.2 g of VC per kg of EDC does not require an add-on control device. Instead, the limit can be achieved at most plants by controlling operating conditions and at the remaining plants through process modifications. At the time the original standard was written, incineration of oxychlorination vent emissions was investigated. Because of expected high energy costs associated with supplemental fuel requirements for combustion, incineration was determined not to be a reasonable method of control for this source.

The amendments proposed in 1977 specified a level of 5 ppm for the oxychlorination vent. The proposed requirement was based on installation of an oxygen feed system with an incinerator or equipment control device. The use of oxygen feed in the EDC oxychlorinaton process decreases the

volume of inert substances in the vent stream and, consequently, the cost for supplemental fuel required for incineration. Comments received on this proposed amendment focused primarily on the high expense and large energy requirements associated with the production of oxygen.

The review study identified no control technology for oxychlorination vents at EDC/VC plants that had not been considered during the development of the original standard. Additionally, the EPA reevaluated the cost of retrofit incinerator controls and reached the same conclusion drawn in the development of the original standard. As before, the high cost associated with incinerating oxychlorination vents at existing EDC/VC plants makes this level of control unreasonable. Thus, the current standard of 0.2 g/kg EDC is considered still to be the most reasonable level of control for existing oxychlorination vents. In addition, the review study concluded that significant new construction or modification of EDC/VC plants is not expected. At this time, only one new EDC/VC facility is reportedly planned. (BF Goodrich has plans to construct an EDC/VC facility in Convent, Louisiana.) Oxychlorination vents at new EDC/VC plants will be regulated by the proposed standards of performance for air oxidation processes (40 CFR Part 60 Subpart III) or by the BACT or LAER requirements of new source review regulations applicable in specific locations to a level comparable to that achievable through the use of incineration. Because the technologically achievable level of control is assured through the current requirements, the EPA concluded that investigation of additional control (i.e., incineration) was not required for oxychlorination vents.

Reactor Opening—0.02 g/kg PVC Product. The current VC standard restricts emissions during polymerization reactor openings. The standard was based on reactor purging and on a reduction in the frequency of reactor openings. An increased level of control was not proposed in the 1977 amendments. (The level of control provided by the current standard, 0.02 g/kg of PVC product, reduces VC emissions to about 1.36 Mg per year for a model PVC plant.) During the review of the standard, no technology was identified that would provide additional VC reductions beyond the level of the current standard. Therefore, the EPA is not investigating further the control of reactor openings.

Combined Sources After Resin Stripping. The sources of VC emissions covered under the current standard include blend tanks, dryers, centrifuges, storage silos, bagging operations, and any sources following the stripper. Control of these emissions is based on either stripping the PVC resin to a specified (based on resin type) residual VC level (i.e., 400 ppm for suspension, bulk, solution, and latex resins; and 2,000 ppm for dispersion resins) or controlling the emissions from all sources following the stripper with a control device. The 1977 proposed amendments would have required "new resins" to be stripped to lower levels (i.e., 100 ppm for suspension, bulk, solution, and latex resins; and 500 ppm for dispersion resins). When the amendments were proposed, the EPA believed that some resins could meet the proposed limits; whereas, for other resins the manufacturer would have been required to develop improved stripping technology or not to produce the resin.

Industry comments stated that most dispersion, copolymer, and bulk resins would suffer degradation if more stringent emission limits were imposed. Additionally, the commenters noted the inherent difficulties in defining a "new resin." Information submitted by commenters indicated that minor adjustments to resin compositions are made routinely, and completely new resins are rarely, if ever, made. As a result of these comments, the EPA concluded that it is impossible in many cases to distinguish between new and existing resins and still have any resins covered by the proposed amendments. Further, the proposed amendments did not address what levels of control could be achieved by improved stripping technology. For these reasons, the EPA chose to evaluate whether higher levels of control are achievable for all resins, or only for some special classes of resins.

The review study found that resin stripping technology has improved since the current standard was promulgated, and that some processors can achieve lower resin residual VC levels than those required in the original standard. In certain cases, some resins can meet the more stringent levels specified in the previously proposed amendments. However, other processors manufacturing resins of differing grades and characteristics can only marginally comply with the original standard. Because of the wide variation in resin grades and characteristics, it cannot be concluded that, even though a particular resin made by one company can meet a particular level, any other resin or similar resins produced by another company could also meet that level. Furthermore, in some cases these processors meeting the more stringent limits proposed previously are stripping these resins to this low level to offset emissions from those resins which are more difficult to strip. Without this ability to average the emissions and reductions among resins, these processors might not achieve the current standard. Exempting resin grades known to be difficult to strip is not feasible because these resins cannot readily be defined. For the foregoing reasons, the EPA has concluded that there is no demonstrated level of control which could significantly and consistently reduce residual VC levels in resins to levels below that required by the current standard. Therefore, the EPA is not investigating further the control of the combined sources after stripping.

Equipment Leaks. Because little was known about leak detection and elimination programs for control of equipment leaks from components in VC service, specific requirements for these programs were not included in the current standard. Instead, each plant was required to institute and implement a formalized leak detection and elimination program incorporating both a fixed-point monitor and a portable monitor. Plant-specific programs were subject to approval by the Administrator. Consequently, due to site-specific differences among plants, as well as variations in leak definitions and monitoring practices, differences in control of equipment leaks among the plants have resulted. Since the standard was promulgated, the EPA has obtained more information pertaining to the control of equipment leaks from components in VC service. With the information obtained form the development of other standards, an effective leak detection and repair program based on use of a portable monitor can now be specified for equipment covered by this program. The specific leak detection and repair requirements are discussed in the Administrative Revisions section of this preamble.

Relief Valve Discharge Standard. Sources of VC emissions covered by this standard include discharges from relief valves on pressure vessels, transfer lines, and other equipment in EDC/VC and PVC plants. The standard is based on emission control by a combination of equipment and process modifications, and operational procedures, found in plants during development of the standard. An exact combination of modifications and operational procedures was not specified. Instead, a performance standard (i.e., an emission

standard) was established because it was believed that different combinations could be equally effective in controlling relief valve discharges. The current format of the standard prohibits all relief valve discharges except emergency discharges. Emergency discharges are described as those which could not have been avoided by taking measures to prevent the discharge (i.e., those that are "nonpreventable"). Since the standard was promulgated, all plants have experienced some releases. Many of these releases are considered preventable by the EPA. Based on visits to plants with good compliance histories, the EPA concluded that a level of performance reflecting compliance with the current format of the standard through the combined effects of equipment, process modifications and operational procedures remains reasonable. during the review, no technological level of control was found that would provide for a more stringent standard. Therefore, the standard is still considered to reflect the appropriate level of control for these sources. However, as discussed in the Administrative Revisions section of the preamble, the EPA is proposing to revise the standard by setting limits for relief valve discharges in a different format.

Administrative Aspects of the Standard. Even though the EPA decided not to revise the level of control associated with the current VC standard, the EPA identified revisions to several administrative aspects of the standard. These revisions as well as those identified above, are discussed in the Administrative Revisions section of the preamble.

(3) Review of Sources Not Previously Covered

This subsection discusses the status of VC sources not covered by the current standard that were identified in the review study. For these sources, the EPA assessed whether a Federal standard was warranted. The EPA's assessment of these sources was based primarily on a quantitative analysis of VC emissions from these sources combined with a qualitative analysis of risks associated with exposure to VC from these sources. The EPA considers these analyses to be adequate in place of a thorough quantitative risk assessment for purposes of determining whether a Federal standard is warranted for these sources. Because these sources are already relatively well-controlled and the quantity of VC emission, and consequently, the risks associated with exposure to VC from these sources, are small in comparison to sources covered by the VC standard, the EPA concluded that none of the additional sources identified in the review study warrant a Federal standard.

Miscellaneous Sources of VC Emissions. Miscellaneous sources are plants other than PVC and EDC/VC plants that use VC as a raw material or produce VC as an intermediate or by-product. The EPA has identified four such plants, two of these plants produce 1,1,1-trichloroethane, one produces perchloroethylene and trichloroethylene and the fourth plant produces pesticides. (An additional 1,1,1-trichloroethane unit was constructed at a fourth location but has reportedly never operated. There are no plans to operate in the furture.) Review of VC emission sources at the identified plants showed them to be well controlled. Emissions of VC from these plants are primarily from fugitive sources and range from less than 1 Mg/yr to 14 Mg/yr per plant. In general, the VC NESHAP requirements for process vents and equipment in VC service are being met at the miscellaneous sources due to company policy considerations and State and local regulatory requirements. In addition, many of the equipment components in VC service would be covered by standards of performance for new sources and standards for sources in nonattainment areas. Based on the investigation of these sources, the EPA concluded that they are already relatively well-controlled and do not contribute significantly to VC exposure. For these reasons, additional requirements for miscellaneous sources of VC are not being proposed at this time.

PVC Fabrication Plants. There are about 8,000 fabrication plants which take the resin produced by PVC plants and fashion it into intermediate or final products. Emissions from these plants are estimated to be about 0.0035 Mg/yr per plant. In comparison to VC production plants (which typically emit about 92 Mg/yr), PVC fabrication plants are small emitters of VC. If standards were developed for this category they would not result in reduced emissions because the best control for these plants is to reduce the VC levels in the resins being processed by the fabricators. Resin stripping beyond the level that process economics would dictate is already being done as a result of the EPA's current standard and OSHA's VC standard. based on the EPA's assessment of these sources, the EPA concluded that they do not contribute significantly to VC exposure. Therefore, the EPA believes that the evaluation of controls for PVC fabrication plants is unnecessary and that the current level of control resulting from the EPA's standard and OSHA's standard is still reasonable.

Landfills. Off-specification resins containing VC has been taken to landfills where the gaseous VC can be released. However, the current EPA standard intends that all resins, including off-specification resins, be stripped to reduce the VC emissions from sources downstream from the stripper. In order to clarify that stripping requirements also apply to the off-specification resins before removal of landfills, these requirements are being restated to explicity address off-specification resins. The EPA believes that the level of control resulting from the stripping requirements is reasonable: thus, VC emission requirements for landfills are not being proposed today. However, the EPA recognizes that VC may be emitted from hazardous waste landfills and is evaluating and may regulate under the Resource Conservation and Recovery Act (RCRA) volatile emissions (including VC) from landfills at hazardous waste disposal facilities. The EPA also recognizes that VC has been detected in municipal landfills. Therefore, in addition to assessing VC emissions from hazardous waste disposal facilities, a (RCRA) Subtitle D-TASK FORCE has been formed which will assess all environmental releases including air emissions from Subtitle D facilities (a category which includes municipal landfills).

Administrative Revisions

As discussed in the Findings and Conclusions of the Review Study section of this preamble, the EPA identified several administrative revisions that are appropriate as a result of the review study. The rationale for the proposed administrative revisions is presented in this section of the preamble. These revisions include: (1) Reformatting the emission limit for relief valve discharges, (2) providing a compliance test procedure and a specific emission limit for operators who strip in the reactors, (3) specifying requirements for leak detection and repair program for equipment components in VC service, and (4) miscellaneous revisions.

Relief Valve Discharges

Background. The current format of the standard for relief valve discharges allows only "emergency" discharges (i.e., discharges that could not be avoided by taking preventive measures). The standard applies to all pressure relief devices on pressure vessels.

transfer lines, and other equipment in EDC/VC and PVC plants. The control techniques considered as the basis of the standard involve a combination of equipment modifications, process modifications, and operational procedures. An exact combination of modifications and operational procedures was not specified in the current standard; rather, a performance standard (i.e., an emission standard) was established because different combinations of the modifications and procedures were expected to be equally effective in controlling relief valve discharges.

Based on 6 years of enforcement and compliance experience, the EPA has concluded that the relief discharge standard has resulted in: (1) Significant reductions in the frequency and quantity of VC discharges from relief valves, (2) significant use of agency resources to evaluate individual discharges for preventability, and (3) uncertainty on the part of producers regarding whether they comply with the standard. Additionally, the EPA learned some of VC and PVC believe that this part of the current standard applies only to discharges through safety relief valves and that discharges through other pressure relief devices, such as rupture disks or manual or automatic vent valves, are not covered. This interpretation is not compatible with the intent behind the current standard. To provide more efficient enforcement by decreasing the burden of individual preventability assessments on the EPA, and to provide a better understanding to plant operators of the goal of the standard, the EPA is proposing to reformat the standard for relief valve discharges and to define the emission points covered by this standard to include appropriately all pressure relief devices. As discussed more completely in the following sections, the EPA is proposing to change the format of the numerical limits in the standard to reflect the number of discharges that occur from those plants complying with the format of the current standard.

The EPA found in the review study that efforts by all EDC/VC and PVC producers to comply with the standard are reflected in their preformance (in terms of size and frequency of discharges) since the standard went into effect. In general, a reduction in the reported frequency and size of relief valve discharges by PVC producers has occurred since 1978. A further decrease in relief valve discharges by the PVC industry occurred between 1980 and 1981. Performance by the EDC/VC industry exhibited a less marked trend of decreased discharges over the compliance period. Following an initial drop in relief valve discharges after the standard went into effect, the frequency and quantity of relief valve discharges by EDC/VC plants have decreased slightly or remained relatively constant.

General Basis for Numerical Limits. In selecting the proposed numerical limits, EPA first evaluated in detail the recent performance (1981 to 1983) of five PVC plants and one EDC/VC plant. These plants were chosen based on discussions with EPA Regional Office personnel and industry and were intended to represent plants with good relief valve discharge records. In general, the EPA's evaluation of these plants indicates that each has adopted the combination of equipment, operational procedures and attitude toward prevention of relief discharges intended by the current standard, and that their resulting performance is consistent with compliance with the current standard. The EPA's evaluation found that a few discharges may continue to occur from some plants that comply with the standard. This observation is consistent with the expectation held by the EPA when the standard was written.

In order to revise the standard in terms of numerical limits representing compliance with the current format of the standard, this evaluation separated PVC and EDC/VC plants. For plants, relief valve discharge performance data were further separated by source (reactor vs. nonreactor) and by resin type. The EPA then reviewed the performance of 25 additional PVC plants and 12 additional EDC/VC plants. The EPA reviewed this large set of plants to ensure that the level of performance demonstrated by the evaluated plants could be achieved by all PVC and EDC/VC plants.

The numerical limits presented in the Findings section of this preamble are based on an evaluation of the number of discharges representing the demonstrated performance level associated with compliance with the provisions of the existing standard.

Format for Numerical Limits. The EPA visited the five PVC plants evaluated in detail. As expected, the EPA found differences in the combinations of hardware and operational procedures associated with control of relief valve discharges of each of the plants. Furthermore, no exact relationship was found between the effectiveness of specific hardware items and operational procedures and prevention of discharges. In the EPA's judgment, the various combinations of hardware and operational procedures implemented by each of the plants along with the attitudes adopted toward preventing relief valve discharges represent the types of control measures that the standard intended. In particular, the EPA concluded that the low frequency of discharges by the visited plants was indicative of their degree of effort to prevent relief valve discharges. Consistent with the goal of this proposed revision, the EPA decided that an alternative numerical emission limit based on performance resulting under the current standard could be revised in a format that would be easier to understand by enforcement and industry personnel.

The EPA investigated two basic ways of expressing relief valve discharge performance for PVC plants. One format is based on mass emissions, for example, the pounds of VC discharged per million pounds of PVC produced (lb VC/MM lb PVC). Based on a review of methods used by industry to determine the amount of VC discharged from relief valves, the EPA was unable to identify a sufficiently accurate method for measuring discharge quantities from relief valves. At present, producers are required only to estimate discharge quantities for reporting purposes. Demonstration of compliance with a lb VC/MM lb PVC limit would require producers to measure the amount of VC discharged during an incident. Because a suitable measurement method was not identified, the EPA decided not to redefine relief valve discharge performance by PVC plants in a lb VC/MM lb PVC format.

Another format is based on the frequency (i.e., number per unit time) of discharge from occurrences. No method for measuring the amount of VC discharged from relief valves is needed because only the occurrence of a release is required for this format. The occurrence of a discharge can be determined by monitoring process parameters as well as inspecting relief valve performance reports. Thus, of the two basis ways of expressing relief valve performance that were considered, the EPA selected a format based on the frequency of discharges.

Based on this decision, the EPA then considered how the format would be applied to PVC and EDC/VC plants. At PVC plants, the frequency of discharges from polymerization reactors and associated process equipment may be related to the fact that a batch process is used to produce most types of PVC. For batch PVC production processes, the opportunity for discharges is related to the number of times a new

polymerization batch is initiated. Expressing relief valve discharge performance for these plants with a discharge-per-batch format accounts for variations among plants in the number of batches produced. The EPA selected 100 polymerization batches as a convenient basis for expressing relief valve discharge performance by PVC plants with batch production processes in a discharge frequency format.

Further, the EPA noted that the ability of batch PVC producers to limit the discharge frequency may be different for reactor and nonreactor discharges and that reactor discharges may vary by resin type at any plant. Consequently, relief valve discharges by individual PVC plants (except for continuous solution process plants) were classified according to type of discharge (i.e., reactor vs. nonreactor) and the reactor discharges were separated by resin type. Nonreactor discharge sources at PVC plants include blowdown tanks, transfer lines, and storage vessels. Because usage of this equipment is also related to some extent to the frequency of batch polymerization operations, the relief valve discharge performance by nonreactor sources in PVC plants with batch production processes was also examined on the basis of number of discharges/100 batches.

Unlike the batch process used to produce other PVC resin types, the solution PVC process is continuous. Thus relief valve discharge performance for the solution PVC process cannot be expressed on a frequency per batch basis. Instead, the relief valve discharge performance associated with the solution production process can only be expressed in terms of the total number of discharges (reactor and nonreactor) per year.

Similarly, the EDC/VC production process is not a batch process, but is continuous. Thus, relief valve discharge performance by EDC/VC plants also cannot be expressed on a frequency per batch basis. Moreover, the EPA was unable to detect a direct relationship between discharge frequency and VC production at EDC/VC plants. Thus, the EPA decided to define relief valve discharge performance for EDC/VC plants on the basis of a total number of annual discharges.

Findings. PVC Reactor Discharges. Suspension resins account for the highest percentage of total PVC production. The remaining PVC production is in the form of bulk, dispersion and solution resins. (A small amount of latex resin is produced by a process closely related to the dispersion process.) Examination of relief valve discharge performance associated with production of suspension and bulk resins indicates that reactor discharge frequency generally is either less than 0.035 discharges/100 batches or is much greater. (Recent reactor discharge frequencies for suspension resin plants with poorer performance levels ranged between 0.059 and 0.101 discharges/100 batches.) Further examination of relief valve discharge performance by suspension resin producers indicates that only one plant experienced more than 4 discharges per year during the period from 1981 to 1983. Performance by this plant also exceeded 0.035 discharges/100 batches.

The reactor discharge frequency associated with dispersion and latex production is typically zero. However, for a typical dispersion or latex resin process with a low production rate (i.e., number of polymerization batches per year), a single emergency reactor discharge in a given year would be equivalent to a discharge frequency of about 0.035 discharges/100 batches.

Nonreactor Discharges. Nonreactor discharge frequencies by PVC plants typically were either less than 0.025 discharges/100 batches or were much greater. (Recent nonreactor discharge frequencies reflecting poorer performance than the 0.025 level ranged between 0.046 and 0.225 discharges/100 batches.) Furthermore, with the exception of two producers, no more than three discharges per year were reported from nonreactor sources in PVC plants during the period from 1981 to 1983.

Each of the five PVC plants that the EPA evaluated in detail was among those achieving 0.035 discharges/100 batches or less in each of the reactor discharge categories and 0.025 discharges/100 batches or less in the nonreactor discharge category. The EPA examined individual discharge incidents for the PVC producers whose recent performance has exceeded 0.035 discharges/100 batches in one or more of the reactor discharge categories or who exceeded 0.025 discharges/100 batches and 3 discharges per year from nonreactor sources. In every case, the EPA identified one or more discharges that were preventable. Elimination of these preventable discharges indicates that these producers should have achieved discharge frequencies comparable to the five PVC plants that the EPA evaluated in detail.

Solution PVC Process. Discharge frequency from both reactor and nonreactor sources by the single plant producing PVC by the solution process was zero during the period 1981 to 1983. Previously, this plant experienced as many as two discharges in a 12-month period. Recent performance suggests that preventable discharges have been eliminated at this plant. With the exception of a potential emergency discharge occurrence, future discharges at this plant are not anticipated.

EDC/VC Discharges. During the review study, the EPA evaluated performance by one EDC/VC plant in detail. This plant experienced about four discharges that could be considered emergencies. Recent (1981 to 1983) relief valve discharge performance data for other EDC/VC producers indicates an industry range of 0 to 7 discharges/yr. Information obtained from plants during the review indicated that, where applicable, similar types of equipment, process modifications and operational procedures used to control relief valve discharges from PVC plants also are used at EDC/VC plants. The EPA examined discharges by the EDC/VC producers who exceeded four discharges in one or more years since 1981 and found that one or more of the discharges at each plant were preventable. Elimination of the preventable discharges would allow each of these plants to reduce their annual discharge frequency to four or fewer.

Summary of Numerical Limits. Based on the study of current relief valve discharge performance by PVC and EDC/VC plants, the EPA is proposing that the following numerical limits for relief valve discharges be added to the standard. Each discharge causing an exceedence of any numerical limit presented below would be considered a violation without regard to whether any individual discharge was preventable.

Category	Numerical limit
(1) Discharges from PVC plants (suspension, dispersion, latex, bulk processing) (a) Reactors:	
—suspension resin process.	0.035 discharges/100 batches, not exceeding 4 discharges/yr.
—dispersion resin process (including latex resin).	0.035 discharges/100 batches.
—bulk resin process.	0.035 discharges/100 batches.
(b) Nonreactor sources.	0.025 discharges/100 batches, not exceeding 3 discharges/yr.
(2) Discharges from PVC plants (solution and other continuous processes).	1 discharge/yr.
(3) Discharges from EDC/VC plants.	4 discharges/yr.

Compliance Provisions. The EPA recognizes that all plants may experience an unavoidable relief valve discharge incident at some time. Examination of relief valve discharge performance by PVC plants with low

discharge frequencies indicated that plants with the lowest polymerization batch frequencies typically experience about one discharge in a 12-month period. The EPA concluded that for most plants a 12-month reporting period (rolling every 6-months) was both suitable and appropriate for determining compliance with the proposed numerical limits. For plants producing only a small amount of a particular resin (i.e., low number of polymerization batches), an apparent violation of the standard may result from a single discharge occurrence during a 12-month compliance period as described below.

For a PVC plant producing a single resin type to meet the numerical limit for reactor discharges (i.e., 0.035 discharges/100 batches), it must experience and average of no more than one discharge per 2.858 polymerization batches over the preceding 12-month period. An average reactor discharge frequency exceeding one discharge per 2.858 batches would be a violation of the standard. However, if the plant made less than 2.858 polymerization batches over the 12-month compliance period, a single discharge occurrence would be an apparent violation of the standard (i.e., the discharge frequency per 100 batches would exceed 0.035). Because insufficient batches were made, the reported discharge frequency per 100 batches would not correctly reflect the performance by that plant in comparison to other plants complying with the standard. In rectifying the undue compliance burden posed on plants with small numbers of batches by the discharge/100 batch format and the selected 12-month compliance period, the EPA is proposing to add additional provisions affecting the number of batches used to calculate the discharge frequency. For PVC plants producing less than 2.858 batches of a particular resin, the minimum number of 2.858 batches will be used when determining compliance with the numerical limits.

PVC plants producing more than one resin type must demonstrate compliance separately for reactor discharges occurring from different resin production processes. Only the relief valve discharges and polymerization batches specific to each resin type are considered for determining compliance. However, for determining compliance with the standard for nonreactor discharges, the total number of polymerization batches (regardless of resin type) are counted.

To determine the number of polymerization batches produced for purposes of assessing compliance, the following guidelines apply. 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 (i.e., blowdown) of reactor contents. Any batch that is aborted following charging of VC to the reactor is nonetheless counted as a polymerization batch in assessing compliance. For PVC plants producing bulk resin, a single "polymerization batch" includes both prepolymerization and postpolymerization reactor operations.

Discharge frequency can be recorded in two ways. Discharge frequency can be recorded on the basis of discharge events (involving discharges from one or more relief valves) or on individual relief valve discharges. In most cases, plants currently report discharges individually when they occur from relief valves on separate equipment. However, certain equipment such as polymerization reactors that are equipped with multiple relief valves may experience discharges simultaneously from more than one relief valve. Most plants currently report such multiple discharges from a single piece of equipment as a single discharge. Thus, the performance levels serving as the basis for the numerical limits represent individual discharges and not multiple discharge events except when they occur from a single piece of equipment. For determining compliance with the numerical limits, discharge frequency is to be recorded on the basis of individual discharges except when simultaneous discharges occur from relief valves on the same piece of equipment.

A relief valve discharge in considered to be any venting through a pressure relief device to prevent or relieve an overpressure condition from equipment in VC service that results in emissions of VC directly or indirectly to the atmosphere. In determining whether or not a relief valve discharge results in emissions to the atmosphere, the controlling factor is the ultimate disposition of the gases. Venting to a manifold or header system that ultimately discharges to the atmosphere constitutes a relief valve discharge. If the manifold or header discharges gases through a control device meeting the 10 ppmv VC emission limit, the venting does not constitute a relief valve discharge.

For purposes of reporting compliance status with the limits, plants will be required to calculate their discharge per batch frequencies with sufficient precision to demonstrate that performance is either equal to, below of in excess of the limits. Based on operating history, relief valve discharge performance by certain plants is expected to be much better than the respective limits. For example, some new suspension resin PVC plants produce about 5, 000 batches during a 12-month compliance period. One and two discharges at one of these plants during a compliance period would result in a discharge performance of 0.02 and 0.05 discharges per 100 batches, respectively. The second discharge during the compliance period would be a violation of the proposed 0.035 discharges per 100 batches limit despite the fact that the first discharge would result in performance well below the limit. These types of plants were considered in selecting the proposed limits and reporting procedures for relief valve discharges. The result that plants of this type must perform well below the limits in the standard in order to be in compliance is consistent with the proposed limits, which were selected to represent an upper boundary on the number of allowable discharges intended by the standard. The EPA expects that plants using the best technology and procedures should be able to perform better than the proposed limits.

Reporting Requirements. The current standard for relief valve discharges requires producers to report discharges within 10 days of the incident. The EPA is proposing to eliminate the 10 day reporting requirements and to require reporting of all discharges on a quarterly basis. Although compliance is to be determined on a semiannual basis, quarterly reporting of discharges is appropriate because violations of the standard may occur well before the end of the 6-month period. Quarterly reporting notifies enforcement personnel of potential violations and violations that have already occurred prior to the end of the compliance period so that corrective actions can take place sooner following the end of the compliance period. Information to be included in the semiannual report for individual relief valve discharges is to be reduced to include only the date, time, source, cause and estimated amount of each discharge occurrence. The semiannual report will also include information on compliance status.

In addition, plants will now be required to maintain relief valve discharge records for 3 years, because of the potentially significant increase in the time period between a discharge occurrence and reporting of the discharge.

Effective Date of Revision. The current standard as written will remain

in effect for relief valve discharges until the proposed revisions are promulgated. The proposed administrative revisions do not change the standard's original intent and are intended only to set limits to facilitate compliance and enforcement efforts. Thus, the current standard will continue to be enforced until the revisions are promulgated.

Stripping-in-Reactor Compliance Test Procedure

The test method for measuring reactor opening losses was developed for resin stripping operations that take place in vessels separate from the reactor. Some PVC plants, including all bulk resin manufacturers, however, do not use separate strippers to remove residual VC from the resin produced. Instead, these plants strip VC from the product resin in the reactor (postpolymerization reactor in the case of bulk resin producers). For plants with reactor resin stripping operations, the concentration of VC in the reactor vapor space, as measured in accordance with the current standard, exceeds the 0.02g/kg of PVC requirement. The high concentrations result form VC monomer diffusing from the resin into the vapor space during the period following completion of the stripping operation (normally occurring under a vacuum that must be broken before the reactor can be emptied) and before the reactor is completely emptied of PVC resin. According to the Federal Register notice of promulgation of the current VC standard (40 FR 46563, October 21, 1976), any VC escaping from the resin after it has been stripped to acceptable levels is not intended to be counted as part of the reactor opening loss. However, the current standard did not include in the measurement method an acceptable method for determining what part of the VC in the vapor space has escaped from the resin after stripping is completed.

The current standard allows bulk resin producers to calculate reactor opening loss emissions from the postpolymerization reactor based on the number of reactor evacuations, the vacuum invloved and the volume of gas in the reactors. For nonbulk resin producers with reactor resin stripping operations, calculation of reactor opening loss emissions is more complicated due to the presence of water vapor in the reactor vapor space. Currently, waivers of testing for producers with nonbulk resin stripping operations in the reactor have been granted on a case-by-case basis by the EPA Regions, typically with the provision that residual VC samples are analyzed on each batch. A variety of calculation methods are then used to establish the reactor opening loss.

Based on experience of the EPA Regional offices, a method for determining the reactor opening loss that accounts for stripping in the reactor has been developed for use by all nonbulk resin producers with reactor resin stripping operations and is included in the proposed revisions to the current VC standard. Limitations for resin residual and reactor opening loss are added together to give a total allowable VC content from these two sources. The measured resin residual VC and the calculated reactor opening loss would then be added together, and averaged over a 24-hour period according to resin type. If the 24-hour average meets the combined standard, the plant would be considered to be in compliance with both the stripping and the reactor opening loss requirements.

Leak Detection and Repair

Background. The current standard requires implementation of a formalized program for detection of leaks from equipment in VC service and elimination of these leaks. The formalized program includes a multipoint VC detector and a portable volatile organic compound (VOC) analyzer. The fixed-point monitoring system continuously monitors VC concentrations in the work area around equipment in VC service and sounds an alarm when concentrations exceed a prescribed level. The portable monitor is used independently to screen individual equipment components for leaks. Rather than specifying the number of points to be monitored, the sensitivities of the multipoint detector, the VC concentration that indicates a leak, and the actions to be taken to repair leaks, the current standard requires each plant owner or operator to prepare a program plan containing these specifications and to submit the plan to the EPA for approval. Plant owners or operators are required to submit data on background concentrations of VC in different areas of the plant to use in determining the VC concentration that should be designated as indicating a leak. Plans, therefore, were tailored by each plant and reviewed by the the EPA Regional Offices.

The EPA found in the review study that differences in leak detection and elimination programs exist among PVC and EDC/VC production plants and miscellaneous sources and that site-specific differences include variations in leak definitions and monitoring practices. The definition and monitoring practices, along with repair practices, are primary influences on the control effectiveness of leak detection and repair programs. Some plants implemented rigorous programs and others implemented programs lacking specific procedures or requirements. Accordingly, the effectiveness of leak detection and elimination programs varies among the plants.

Since the current standard was promulgated, the EPA has obtained more information pertaining to the control of emission from equipment leaks. Based on this information and the review of the leak detection and elimination plans being implemented to control emissions of VC, the EPA decided to specify leak detection and repair requirements for certain equipment components in VC service. Although information obtained from development of other standards indicates that a routine leak detection and repair program with a portable monitor can be an effective emission reduction technique without the requirement of a fixed point monitoring system, the EPA concluded that fixed-point monitoring systems already in place have uses that justify their retention in the current standard. In particular, fixed-point monitors allow for quick detection of certain large VC leaks that might otherwise go undetected until the next routine portable monitor screening. The EPA recognizes that existing fixed-point monitoring plans will need to be reviewed in light of the leak detection and repair requirements being specified at this time. The complexity of existing fixed-point monitoring plans, in terms of number and distribution of monitoring points, varies greatly among plants. Consequently, some plant owners or operators may want to alter the number of points that are monitored and the distribution of monitoring locations to better complement the specified portable monitoring requirements. Such changes to existing fixed-point monitoring plans will be allowed providing they do not alter the plant's ability to detect large VC leaks.

The proposed revisions are primarily intended to standardize control of VC emissions from equipment leaks. In doing this, the EPA is concerned that existing effective plans not be inappropriately changed. The proposed revisions include provisions that allow plants with existing effective plans to periodically demonstrate the effectiveness of their plans without additional requirements. Accordingly, the EPA requests comments from industry representatives concerning the specific effects of specifying leak

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 discs 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 istead 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 ruptures 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 techniques 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 equirements 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) 426-2675. (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 CERLA 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 exahust 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) is 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 paragarph (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 paragarphs (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 lead 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, annully 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_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	65	183.4	90	394.9
41	58.3	67	193.5	91	402.6
42	61.5	68	197.4	94	416.9
43	64.8	69	179.3	95	425.4
44	68.3	69	187.5	96	433.9
45	71.9	69	195.7	97	442.7
46	75.6	69	204.0	98	451.7
47	79.5	69	214.2	99	460.1
48	83.7	69	223.7	99	469.8
49	88.0	70	233.7	99	479.8
50	92.5	71	243.9	99	489.9
51	97.2	72	254.6	99	500.6
52	102.7	73	265.7	99	510.9
53	107.2	74	277.2	99	522.5
54	112.5	75	288.1	99	537.5
55	118.0	76	299.4	97	548.1
56	123.8	77	314.9	98	707.7
57	129.8	78	327.5	99	725.2
58	136.1	79	341.0	100	760.0
59	142.6	80	355.3		
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 (m^3) at end of strip from the following equation:

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

where:

RVSV = reactor vapor space volume, in m^3

RC = reactor capacity, in m^3

WV = volume of water in reactor from recipe, in m^3

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

833 = typical density of polyvinyl chloride, in kg/m^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:

$$C = (PPMVC)(10^{-6}) + \frac{(PPVC)(RVSV)(1.002)}{(PVCW)(273+RT)}$$

where:

C = g vinyl chloride/kg polyvinyl chloride product

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

10^{-6} = conversion factor for ppm

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

RVSV = reactor vapor space volume determined according to paragraph (g)(6)(ii)(C) of this section, in m^3

1.002 = ideal gas constant in g—°K/mm Hg—m^3 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

18. 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)(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.

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 (a) 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(a).

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)(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:

$$A_{T_i} = \frac{\sum_{j=1}^{s} P_{a_j} M_{a_j}}{Q_{T_i}} = \frac{P_{a_1} M_{a_1} + P_{a_2} M_{a_2} + \cdots + P_{a_s} M_{a_s}}{Q_{T_i}}$$

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: $i = 1, 2 \ldots m$ 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_j resin, in ppm.

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

G_j = Grade of resin: e.g., G_1, G_2, and G_s.

s = 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:

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

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 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 exceedances 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 polyvinly 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 resins 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:

$$F_{st} = \frac{N}{Y}, \text{ and } F_{st} = N$$

where

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

F_{st} = 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:

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

where:

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

F_t = 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 pollutants" 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 1978)

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