

LAW OFFICES
KELLER AND HECKMAN

1001 G STREET, N.W.
 SUITE 500 WEST
 WASHINGTON, D.C. 20001
 TELEPHONE (202) 434-4100
 TELEX 49 95551 "KELMAN"
 TELECOPIER (202) 434-4646

BOULEVARD LOUIS SCHNIDT 87
 B-1040 BRUSSELS
 TELEPHONE 32(2) 732 52 80
 TELECOPIER 32(2) 732 53 92

JOSEPH E. KELLER
 JEROME H. HECKMAN
 WILLIAM M. BORGHESE, JR.
 MALCOLM D. MACARTHUR
 WAYNE V. BLACK
 TERRENCE D. JONES
 MARTIN W. BERCOWICZ
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 WILLIAM L. KOVACS
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 BRIAN T. ASHBY
 T. PHILLIPS BECK
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 LESLIE E. SILVERMAN
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 TANARA T. DAVIS
 ROBERT H. G. LOCKWOOD
 LORI B. BARON
 CAROL MOORE TOHY
 JOAN C. SYLVAIN
 MARTHA PELLEGRINI

SCIENTIFIC STAFF
 DANIEL S. DIXLER, Ph.D.
 CHARLES V. BREDER, Ph.D.
 ROBERT A. MATHEWS, Ph.D.
 JOHN P. HODDERMAN, Ph.D.
 HOLLY HUTCHINS FOLEY
 JUSTIN C. POWELL, Ph.D.
 JANETTE HOUK, Ph.D.
 LESTER BORODINSKY, Ph.D.

TELECOMMUNICATIONS
 ENGINEER
 CHARLES F. TURNER

*NOT ADMITTED IN D.C.
 *RESIDENT BRUSSELS

WRITER'S DIRECT DIAL NUMBER

April 19, 1993

EPA's Air Docket
 LE-131
 Room M1500
 U.S. Environmental Protection Agency
 401 M Street, S.W.
 Washington, D.C. 20460

2020
Bin Hayes (not sure if its ymas)
FYE
Doug ROSENBERG
4/26/93
 (202) 434-4168
 PLEASE RETURN IF NECESSARY

Re: Comments of the Vinyl Institute

Dear Sir/Madam:

Enclosed for filing in this docket are an original and one copy of the comments of the Vinyl Institute on EPA's proposed National Emission Standards for Hazardous Air Pollutants for Source Categories; Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry and Seven Other Processes. The proposed rule was published at 57 Fed. Reg. 62608 et seq. (December 31, 1992), and the comment date was extended to April 19, 1993 by order published at 58 Fed. Reg. 11201 (February 24, 1993).

If there are any problems associated with this submission, or if you require additional information about the Vinyl Institute or its position on this matter, please do not hesitate to contact this office directly.

Respectfully submitted,

S. Craig Tautfest
 S. Craig Tautfest

cc (w/o encl):
 Larry Thomas
 H. Patrick Toner
 cc (w/encl):
 Robert H. Burnett
 Meredith Scheck
 Maureen Healey

R&S 143873

BEFORE THE
U.S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

In the Matter of	)	
	)	
National Emission Standards for	)	
Hazardous Air Pollutants for Source	)	Air Docket LE-131
Categories; Organic Hazardous Air	)	
Pollutants from the Synthetic Organic	)	Docket No. A-90-19
Chemical Manufacturing Industry and	)	
Seven Other Processes	)	

COMMENTS OF THE VINYL INSTITUTE

The Vinyl Institute is pleased to submit these Comments in response to the above-captioned rule which was published at 57 *Fed. Reg.* 62608 *et seq.* (December 31, 1992). The Vinyl Institute (VI), a division of The Society of the Plastics Industry, Inc. (SPI), is a not-for-profit trade association representing the interests of the domestic manufacturers of vinyl chloride (VC), polyvinyl chloride (PVC), and ethylene dichloride (EDC).¹ The proposed regulations (known as the hazardous organic NESHAP or HON) represent EPA's first step towards the regulation of hazardous air pollutants (HAPs) under Section 112 of the Clean Air Act Amendments of 1990 (the Act). The HON establishes maximum achievable control technologies (MACT) for the synthetic organic chemical manufacturing industry (SOCMI) and for seven processes in other source categories. In addition, the HON will regulate equipment leaks from process operations in all eight categories. The production of VC and EDC are included in the list of chemical manufacturing processes which are potentially

¹ Members of the Vinyl Institute are responsible for over 80% of the domestic production volume of vinyl chloride and over 60% of the domestic production of polyvinyl chloride. VI's members include: BF Goodrich Company, Borden Chemicals and Plastics, CertainTeed Corporation, The Dow Chemical Company, Georgia Gulf Corporation, Occidental Chemical Corporation, PPG Industries, Inc., Shintech, Inc., Union Carbide Chemicals and Plastics Company, Inc., Vista Chemical, and Westlake PVC Corporation.

subject to the HON. § 63.105; (47 FR 62691).² As such, the VI has an obvious and immediate interest in this proceeding.

EXECUTIVE SUMMARY

EDC/PVC/VC manufacturing operations should continue to be governed by the existing national emission standard for hazard air pollutants for vinyl chloride (VC NESHAP) which is codified at 40 C.F.R. 61.63 *et seq.* Section 112(d) of the Act directs EPA to adopt emissions standards for both new and existing sources of the 189 HAPs (including vinyl chloride) which are listed in the Act. The Agency is further directed to require sources to use the maximum achievable control technology (MACT) to reduce emissions of those substances. In determining MACT for particular emission sources, EPA is instructed to consider the cost of achieving such emission reductions, any non-air environmental impacts, and energy requirements. 42 U.S.C. § 7412(d) (1992). Section 112(q) directs EPA to review all HAP emissions standards adopted before the Act to ensure that they comply with the MACT requirements of § 112(d). These existing NESHAPs are to continue in effect for a period of ten years, or until modified or ratified by EPA.

Total emission controls required under the existing VC NESHAP are more stringent than the controls proposed in the HON. For example, process vent emissions must be controlled to 20 parts per million (ppm) under the HON proposal. In contrast, the VC NESHAP sets a limit of 10 ppm. Furthermore, unlike the HON proposal, the VC NESHAP does not permit emissions averaging. Thus, the total emissions reductions which

² For convenience, citations to the proposed rule will be referenced in these Comments by proposed section number and the page on which they appear in the December 31, 1992 *Federal Register*. E.g., § 63.105; (47 FR 62691).

have been realized under the VC NESHAP are *lower* than those expected to be realized under the HON.

Recognizing that the ultimate goal of the Act is to achieve the lowest possible HAP emissions at the most reasonable cost, proposed section 63.103(d)(2) requires sources to meet the "most stringent" standard applicable under 40 C.F.R. Parts 60, 61, or 63. Since the VC NESHAP is the "most stringent" standard applicable; it, and not the HON, should govern EDC/PVC/VC operations. However, to avoid the confusion and administrative uncertainty which is likely to be caused by the application of two very different sets of regulations, EPA should specifically exempt EDC/PVC/VC operations from the HON. This is particularly true when one considers the impact of other, existing regulations governing these emissions.

COMMENTS

**I. EDC/PVC/VC Production is Currently Regulated
Under the Vinyl Chloride NESHAP -- 40 C.F.R. § 61.60 et seq.**

Emissions of vinyl chloride associated with the production of EDC/PVC/VC are strictly regulated under the National Emission Standard for Vinyl Chloride (VC NESHAP). 40 C.F.R. § 61.60 *et seq.* The VC NESHAP imposes a general prohibition against the discharge of vinyl chloride in a concentration greater than 10 parts per million (ppm) from: (1) process exhaust streams; (2) strippers; (3) mixing, weighing and holding stations; (4) monomer recovery systems; and (5) transfer equipment. 40 C.F.R. §§ 61.63, 61.64, 61.65. The rule also contains strict regulations concerning the control of fugitive emissions from relief valves, rotating pumps, reciprocating pumps, loading and unloading lines, compressors, agitators, and from cleaning operations. 40 C.F.R. § 61.65.

The VC NESHAP is one of only seven hazardous air emission standards adopted by EPA under the regulatory scheme imposed by Section 112(d) of the original Clean Air Act. That rule was subjected to extensive notice and comment before its adoption in 1976.³ As recently as 1985, EPA determined that the control technologies being utilized by the vinyl industry are the best technologies available for the control of the pollutants involved.⁴

Since 1976, the vinyl industry has made a tremendous commitment of manpower and money to comply with the VC NESHAP. To achieve the levels of emission control mandated by the rule, VI member companies have been forced to redesign and replace much of their processing equipment, and have made a number of changes in the operation and maintenance of their facilities. These companies have also spent a considerable amount of time, effort and money implementing the monitoring, recordkeeping, and reporting programs mandated by the rule. Because of the complex nature of these chemical processing operations, the successful implementation of the various engineering and management controls necessary to comply with the VC NESHAP has taken time and has required persistent fine-tuning. There would be no environmental benefit to imposing additional regulatory requirements on these operations when the new regulations would not result in any significant reduction in total emissions and, might actually result in increased emissions from some sources.

³ 41 *Fed. Reg.* 46561 (Oct. 21, 1976)

⁴ 50 *Fed. Reg.* 1182, 1183-1186 (Jan. 9, 1985).

**II. The Existing VC NESHAP Is
"More Stringent" Than the Proposed HON**

EPA should exempt EDC/PVC/VC operations from the HON because continued application of the existing VC NESHAP will result in more stringent emissions control than the HON. A line-by-line comparison of the HON and the VC NESHAP is difficult, if not impossible, because the two regulations take very different approaches to the control of emissions. The VC NESHAP applies to a well-defined industry. Rather than focusing on end-of-the-stack emission controls, many VC NESHAP provisions are based on process modifications. In contrast, the HON (which is designed to apply to a much broader group of industries) tends to rely much more heavily upon end-of-the-stack or equipment controls. A careful comparison these two standards as applied to the EDC/PVC/VC industry confirms that application of the VC NESHAP will result in greater reductions in total emissions at EDC/PVC/VC facilities than would the HON.

The scope of the VC NESHAP and the HON are quite similar. Both cover process vents, storage vessels, transfer operations, process wastewater, and equipment leaks. In general, while the HON sets an emission limit of 20 ppm, the VC NESHAP requires EDC/PVC/VC operations to limit the concentration of VC in *all* gas exhaust streams to no more than 10 ppm. 40 C.F.R. §§ 61.62, 61.63, 61.64, 61.65. This limitation is applicable to all process vents, storage vessels, transfer operations, pumps and compressors.

Because the ultimate goal of the CAA is the reduction of total air emissions, the use of process controls should be preferred over end-of-pipe controls. For example, under the existing VC NESHAP, VC emissions from resin driers are controlled, primarily, by stripping VC from the PVC resin before drying. This procedure was selected because: (1) it is technically and economically infeasible to adequately control VC emissions from large air-

volume, high-moisture, low VC-content drier exhaust streams; and (2) the use of combustion devices results in increased energy consumption and increased emissions of pollutants such as NO_x, CO, and CO₂. In that regard, the VI urges EPA to clarify the fact that in-process controls, such as slurry stripping and reactor purging, are to be credited in calculating the total emissions reductions being achieved at a facility.

A. Wastewater

Section 63.133 of the proposed HON sets out MACT for the wastewater streams of facilities regulated under the HON. Although that provision indicates that the use of fixed or floating roof tanks is the preferred control technique for most HAP-contaminated streams, section 63.133(a)(4) authorizes affected facilities to utilize "an equivalent means of emission limitation." The VI maintains that the control strategies currently being used to satisfy the limitations set forth in the VC NESHAP (which requires that in-process wastewater be stripped to 10 ppm or less) *are* an equivalent (or superior) emission control to that required under the HON. EPA should, therefore, allow EDC/PVC/VC operations to continue to abide by the wastewater emission limitations set forth in the VC NESHAP.⁵

B. Storage

The storage provisions of the HON are roughly equivalent to those required under the VC NESHAP. Because of the high vapor pressure of VC, the HON would require operators to maintain VC in a positive-pressure, closed-vent system. § 63.119; (47 FR 62707-709). Here again, however, the terms of the VC NESHAP appear to be more

⁵ The pollutant content of wastewater streams from EDC operations is also governed by effluent limitations for the organic chemicals, plastics, and synthetic fibers industry ("OCPSF limitations"). See 40 C.F.R. Part 414. Thus, even those wastewater streams from EDC operations which might not be governed by the VC NESHAP are already subject to strict OCPSF limitations.

stringent than the HON. Because of the physical nature of VC, it must be stored in closed-vent, pressurized tanks. Further, the VC NESHAP provides that "there is to be no discharge to the atmosphere from any relief valve on any equipment in vinyl chloride service."^o The HON, on the other hand, would allow some emission of VC to the atmosphere since § 63.119(e)(2) permits the use of control devices on closed-vent systems so long as, the inlet emissions are reduced by 95%.

The VI urges EPA to modify the proposed HON to confirm that any storage equipment in vinyl chloride service shall continue to be governed by the VC NESHAP. Alternatively, EPA should issue a notice which indicates that the technologies used to satisfy the storage equipment emission limitations of the VC NESHAP are approved alternate means of control for VC storage equipment pursuant to proposed Section 63.121.

C. Equipment Leaks

The equipment leak provisions of the HON were proposed as a result of the Regulatory Negotiation process. While the VI understands and supports EPA's desire to implement equipment leak control provisions on those SOCMF facilities which are not presently subject to such controls, we must also point out that the EDC/PVC/VC industry has been covered by similar provisions under the VC NESHAP for several years. The equipment leak provisions of the VC NESHAP appear to be at least as stringent as those proposed under the HON. The VI, therefore, fails to see what purpose would be served by subjecting EDC/PVC/VC operations to the equipment leak provisions of the HON. The overlap, redundancy, and/or conflict created by the application of both sets of requirements is almost certain to create unnecessary work and confusion, and shows no promise of

^o 40 C.F.R. § 61.65(a).

decreasing overall emissions. EPA should, therefore, modify the proposed HON to make clear the fact that equipment leaks at EDC/PVC/VC operations shall continue to be governed by the VC NESHAP.

Application of the HON to the EDC/PVC/VC industry seems even more redundant when one considers the extent of existing state regulation of those processes. For example, the State of Louisiana typically regulates leaks in EDC/PVC/VC facilities at the 1,000 ppm level and, Louisiana and other petrochemical states are rapidly moving towards a leak definition of 500 ppm. Thus, subjecting the EDC/PVC/VC industry to the HON would not result in any identifiable environmental gain in terms of leak prevention, and would impose considerable additional administrative burdens.

III. EDC/PVC/VC Operations Should Only be Subject to One Emissions Control Strategy

The VI urges EPA to modify the proposed HON to clarify that EDC/PVC/VC operations need only comply with the emission control limitations established under the VC NESHAP. Section 63.103(d)(2) of the proposed HON would require sources to comply with the most stringent standards applicable in those cases where the same "emission point" is subject to the HON, *and* to another NESHAP. § 63.103(d)(2); (47 FR 62690). Because "emission point" is defined as "an individual process vent, storage vessel, transfer rack, wastewater stream, or equipment leak,"⁷ that provision would require VI members to analyze hundreds of "emission points" at each facility to determine which set of regulations should apply – the HON or the VC NESHAP.

⁷ § 63.101; (47 FR 62688).

The VI opposes this proposal as applied to EDC/PVC/VC production because it will require EDC/PVC/VC producers to expend considerable manpower and capital with no reasonably foreseeable benefit in terms of total emissions reduction. The VI firmly believes that the total emissions reduction achieved under the existing VC NESHAP will exceed that which would be required under the HON proposal. Furthermore, the programs and equipment necessary to monitor and report upon compliance with the VC NESHAP are already in place and have been tested and proven to be effective.

Because the HON allows for emissions averaging, and because the focus of control under the two standards is so different, it will be quite difficult to prove which standard imposes the most stringent controls upon individual emissions points. This issue will be further complicated and confused by requiring a facility to apply different standards to various emissions sources within a single facility. Such duplicative regulation will impose unjustifiable costs upon the operation of EDC/PVC/VC facilities. Thus, the VI urges EPA to modify the HON to indicate that EDC/PVC/VC operations are subject to the existing VC NESHAP. In addition EPA should modify proposed section 63.103(d)(2) by replacing the term "emission point" with the term "source." This will make the proposal consistent with the facility-wide approach of the HON proposal.⁸

CONCLUSION

The VI recognizes EPA's efforts in drafting the HON, and we generally support the emission control strategies which EPA has proposed for the SOCMI. The VI believes, however, that EPA should not apply the HON to those emission sources associated with

⁸ This last point is also raised in comments filed by Dow Chemical Company, whose comments we support.

EDC/PVC/VC production which are already subject to the VC NESHAP. The vinyl industry has a tested and proven record of reducing VC emissions and has implemented a number of process changes which have reduced the total emissions from EDC/PVC/VC facilities considerably below that required by the VC NESHAP.

Implementation of the HON, as is, could force EDC/PVC/VC facilities to comply with two sets of duplicative and sometimes conflicting regulations with no concomitant benefit in terms of emissions reductions. Indeed, because the HON allows for emissions averaging, some facilities might actually be allowed to increase emissions from some sources. Finally, the HON offers no guidelines on how a facility is to determine which of two potential control strategies is "more stringent." This situation could lead to costly and litigious arguments over which standards to apply, and would, in no way, advance the basic purpose of the CAA.

For the reasons stated above, the Vinyl Institute respectfully urges the Environmental Protection Agency to act in accordance with these comments.

Respectfully submitted,


for Robert H. Burnett
Executive Director

Of Counsel:

Jerome H. Heckman
Peter L. de la Cruz
S. Craig Tautfest
KELLER AND HECKMAN
1001 G Street, N.W.
Washington, D.C. 20001

R&S 143883

LAW OFFICES
KELLER AND HECKMAN

1001 G STREET, N.W.
SUITE 500 WEST
WASHINGTON, D.C. 20001
TELEPHONE (202) 434-4100
TELEX 49 95551 "KELMAN"
TELECOPIER (202) 434-4848

BOULEVARD LOUIS SCHMIDT 87
B-1040 BRUSSELS
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JOSEPH E. KELLER
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SCIENTIFIC STAFF
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TELECOMMUNICATIONS
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*NOT ADMITTED IN D.C.
PRESIDENT BRUSSELS

WRITER'S DIRECT DIAL NUMBER

March 8, 1993

(202) 434-4141

VIA FEDERAL EXPRESS

To: Vinyl Institute Health Safety and Environment Committee

Re: Draft Comments on the EPA HON Proposal

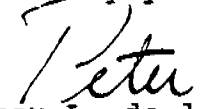
Dear Committee Member:

We have prepared the enclosed draft comments on the Environmental Protection Agency's (EPA) proposal to regulate the emission of certain organic hazardous air pollutants. 57 Fed. Reg. 62608 (Dec. 31, 1992) (HON Proposal). The draft comments are based on the discussion at the February 4 Committee meeting. Final comments must be filed with the Agency by April 19, 1993.1/

If your initial review of the draft comments suggest that it may be helpful to hold a meeting to finalize the draft, we would appreciate a response by March 16 so that a meeting might be scheduled. In the event that no meeting is held, we request that you provide any comments by April 3, 1993. This will give us an opportunity to revise the draft and, if necessary, obtain the Committee's concurrence on extensive or substantive changes.

Craig Tautfest and I look forward to hearing from you.

Cordially yours,


Peter L. de la Cruz

Enclosure

cc: Larry Thomas (w/o enclosure)
Lewis R. Freeman, Jr.
H. Patrick Toner (w/o enclosure)
Meredith Scheck
Maureen Healey

1/ The original deadline of March 31 was extended. 58 Fed. Reg. 11201 (Feb. 24, 1993).

R&S 143902

BEFORE THE
U.S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

In the Matter of	)	
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National Emission Standards for	)	
Hazardous Air Pollutants for Source	)	Air Docket LE-131
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if not impossible, because the two regulations take very different approaches to the control of emissions. The VC NESHAP applies to a well-defined industry. Rather than focusing on end-of-the-stack emission controls, many VC NESHAP provisions are based on process modifications. In contrast, the HON (which is designed to apply to a much broader group of industries) tends to rely much more heavily upon end-of-the-stack or equipment controls. A careful comparison these two standards as applied to the EDC/PVC/VC industry confirms that application of the VC NESHAP will result in greater reductions in total emissions at EDC/PVC/VC facilities than would the HON.

The scope of the VC NESHAP and the HON are quite similar. Both cover process vents, storage vessels, transfer operations, process wastewater, and equipment leaks. In general, while the HON sets an emission limit of 20 ppm, the VC NESHAP requires EDC/PVC/VC operations to limit the concentration of VC in *all* gas exhaust streams to no more than 10 ppm. 40 C.F.R. §§ 61.62, 61.63, 61.64, 61.65. This limitation is applicable to all process vents, storage vessels, transfer operations, pumps and compressors.

Because the ultimate goal of the CAA is the reduction of total air emissions, the use of process controls should be preferred over end-of-pipe controls. For example, under the existing VC NESHAP, VC emissions from resin driers are controlled, primarily, by stripping VC from the PVC resin before drying. This procedure was selected because: (1) it is technically and economically infeasible to adequately control VC emissions from large air-volume, high-moisture, low VC-content drier exhaust streams; and (2) the use of combustion devices results in increased energy consumption and increased emissions of pollutants such as NO_x, CO, and CO₂. In that regard, the VI urges EPA to clarify the fact that in-process

controls, such as slurry stripping and reactor purging, are to be credited in calculating the total emissions reductions being achieved at a facility.

A. Wastewater

Section 63.133 of the proposed HON sets out MACT for the wastewater streams of facilities regulated under the HON. Although that provision indicates that the use of fixed or floating roof tanks is the preferred control technique for most HAP-contaminated streams, section 63.133(a)(4) authorizes affected facilities to utilize "an equivalent means of emission limitation." The VI maintains that the control strategies currently being used to satisfy the limitations set forth in the VC NESHAP (which requires that in-process wastewater be stripped to 10 ppm or less) *are* an equivalent (or superior) emission control to that required under the HON. EPA should, therefore, allow EDC/PVC/VC operations to continue to abide by the wastewater emission limitations set forth in the VC NESHAP.

B. Storage

The storage provisions of the HON are roughly equivalent to those required under the VC NESHAP. Because of the low vapor pressure of VC, the HON would require operators to maintain VC in a positive-pressure, closed vent system. § 63.119; (47 FR 62707-709). Here again, however, the terms of the VC NESHAP appear to be more stringent than the HON. Because of the physical nature of VC, it is stored in unvented pressurized tanks. Further, the VC NESHAP provides that "there is to be no discharge to the atmosphere from any relief valve on any equipment in vinyl chloride service."⁵ The HON, on the other hand, allows some emission of VC to the atmosphere since

⁵ 40 C.F.R. § 61.65(a).

§ 63.119(e)(2) permits the use of control devices on closed vent systems so long as, the inlet emissions are reduced by 95%.

The VI urges EPA to modify the proposed HON to confirm that any storage equipment in vinyl chloride service shall continue to be governed by the VC NESHAP. Alternatively, EPA should issue a notice which indicates that the technologies used to satisfy the storage equipment emission limitations of the VC NESHAP are approved alternate means of control for VC storage equipment pursuant to proposed Section 63.121.

C. Equipment Leaks

The equipment leak provisions of the HON were proposed as a result of the Regulatory Negotiation process. While the VI understands and supports EPA's desire to implement equipment leak control provisions on those SOCMF facilities which are not presently subject to such controls, we must also point out that the EDC/PVC/VC industry has been covered by similar provisions under the VC NESHAP for several years. The equipment leak provisions of the VC NESHAP appear to be at least as stringent as those proposed under the HON. The VI, therefore, fails to see what purpose would be served by subjecting EDC/PVC/VC operations to the equipment leak provisions of the HON. The overlap, redundancy, and/or conflict created by the application of both sets of requirements is almost certain to create unnecessary work and confusion, and shows no promise of decreasing overall emissions. EPA should, therefore, modify the proposed HON to make clear the fact that equipment leaks at EDC/PVC/VC operations shall continue to be governed by the VC NESHAP.

**III. EDC/PVC/VC Operations Should Only be
Subject to One Emissions Control Strategy**

The VI urges EPA to modify the proposed HON to clarify that EDC/PVC/VC operations need only comply with the emission control limitations established under the VC NESHAP. Section 63.103(d)(2) of the proposed HON would require sources to comply with the most stringent standards applicable in those cases where the same "emission point" is subject to the HON, *and* to another NESHAP. § 63.103(d)(2); (47 FR 62690). Because "emission point" is defined as "an individual process vent, storage vessel, transfer rack, wastewater stream, or equipment leak,"⁶ that provision would require VI members to analyze hundreds of "emission points" at each facility to determine which set of regulations should apply -- the HON or the VC NESHAP.

The VI opposes this proposal as applied to EDC/PVC/VC production because it will require EDC/PVC/VC producers to expend considerable manpower and capital with no reasonably foreseeable benefit in terms of total emissions reduction. The VI firmly believes that the total emissions reduction achieved under the existing VC NESHAP will exceed that which would be required under the HON proposal. Furthermore, the programs and equipment necessary to monitor and report upon compliance with the VC NESHAP are already in place and have been tested and proven to be effective.

Because the HON allows for emissions averaging, and because the focus of control under the two standards is so different, it will be quite difficult to prove which standard imposes the most stringent controls upon individual emissions points. This issue will be further complicated and confused by requiring a facility to apply different standards to

⁶ § 63.101; (47 FR 62688).

various emissions sources within a single facility. Such duplicative regulation will impose unjustifiable costs upon the operation of EDC/PVC/VC facilities. Thus, the VI urges EPA to modify the HON to indicate that EDC/PVC/VC operations are subject to the existing VC NESHAP. In the alternative, and at a minimum, EPA should modify proposed section 63.103(d)(2) to provide that all of the emissions sources associated with a covered operation are to be regulated under one NESHAP.

CONCLUSION

The VI recognizes EPA's efforts in drafting the HON, and we generally support the emission control strategies which EPA has proposed for the SOCMI. The VI believes, however, that EPA should not apply the HON to those emission sources associated with EDC/PVC/VC production which are already subject to the VC NESHAP. The vinyl industry has a tested and proven record of reducing VC emissions and has implemented a number of process changes which have reduced the total emissions from EDC/PVC/VC facilities considerably below that required by the VC NESHAP.

Implementation of the HON, as is, could force EDC/PVC/VC facilities to comply with two sets of duplicative and sometimes conflicting regulations with no concomitant benefit in terms of emissions reductions. Indeed, because the HON allows for emissions averaging, some facilities might actually be allowed to increase emissions from some sources. Finally, the HON offers no guidelines on how a facility is to determine which of two potential control strategies is "more stringent." This situation could lead to costly and litigious arguments over which standards to apply, and would, in no way, advance the basic purpose of the CAA.

For the reasons stated above, the Vinyl Institute, by and through its undersigned counsel, respectfully urges the Environmental Protection Agency to act in accordance with these comments.

Respectfully submitted,

Peter L. de la Cruz
Associate General Counsel

Of Counsel:

Jerome H. Heckman
S. Craig Tautfest
KELLER AND HECKMAN
1001 G Street, N.W.
Washington, D.C. 20001