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October 17, 1986

Martin McGregor, Esquire
Jamison and McGregor
Suite 3990
Republic Bank Center
700 Louisiana
Houston, Texas 77002

Re: EPA Vinyl Chloride Litigation

Dear Martin:

Enclosed is the summary of Environmental Protection Agency (EPA) litigation involving enforcement of the Vinyl Chloride Clean Air Act Standard. I hope that it will be of some assistance to you in negotiating with the government on the Ethyl case.

I would be most appreciative of any pleadings or other information you could share with me on the progress of the case. Similarly, if I can be of any further assistance to you, please feel free to give me a call.

Cordially yours,

Peter

Peter L. de la Cruz

Enclosure

LITIGATION UPDATE - VC STANDARD, INDUSTRY VS. GOVERNMENT - AS OF 9/86

	Company	Where	Prod'n	$ Penalty	Emergency Releases RV	RD	MV	LBS. VC	Misc.	Report'g	ROL	2 Yr. Waiver
15	ETHYL	LA	VC	IN LITIGATION	81		17	182,000				
16	OCCIDENTAL	LA	PVC	"	9			2,161		2	Settled	
17	GOODRICH	KY	[illegible]	settled "	20			91,000				
[illegible]	GOODRICH	KY	[illegible]	"	19			57,000	YES			
19	GOODRICH	LA		"	10		12	55,000		YES	Settled	
20	BORDEN	LA		"	5			64,000	YES			
21	BORDEN	LA		"	34			23,000		18		
22	DOW	LA	VC	"	10			15,000	YES			
23	DOW	TX	VC	"	10			13,000	YES		Settled	
24	FORMOSA	LA		"	8			24,000	YES			
[illegible]	PPG	LA	VC	"	24			32,000	YES			
26	UCC	TX		"	2			9,700	YES			
27	Shintech	TX										
28	Shell	TX										
29	Air Products	FL										

SPI-06130

VC PENALTIES

$1,916,000	Total from attached 9/86 Report
117,500	Dow, Freeport, TX, 3/87
395,000	BFG, Plaquemine, LA, 4/87
225,000	PPG, Lake Charles, LA, 7/87
425,000	Occidental, Addis, LA, 10/87
3,078,500	SUBTOTAL
1,250,000	Borden
$4,328,500	TOTAL

I am missing the figures for a number of cases so the actual total is probably $5 million or so.

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. Enviromental 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. Glibert 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. The 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

On the other hand, the proposal states that if emissions from existing sources are already below the emission level applicable, this proposed amendment would give a credit for the difference between the emission limit and the actual emission level. This rationale is inconsistent with the stated goals of prohibiting an increase of ambient levels of vinyl chloride.

The amendment states the effects of reducing vinyl chloride emissions is less than one percent. The basis for these calculations is unclear and should be made explicit. If this statement is true, the net benefit of this amendment is questionable.

D. Post Comment-Period Developments

Pursuant to Section 112 of the Act, in 1980 EPA undertook a comprehensive review of the vinyl chloride standard. This review included contracting with TRW, Inc. to evaluate emission control technologies, existing sources not covered by the standard, new sources not identified during the original study, and enforcement experience at federal and state levels. TRW reported on all these factors as well as current industry performance and the impact of other regulations.16/ The industry's cost of compliance for the ten-year period from 1977-1986 was estimated to be $765.7 million in 1977 dollars.17/ EPA subsequently issued revised figures showing total annual air pollution control costs of $1.2 billion during the 1981-1990 period for industry compliance with the vinyl chloride standard.18/

16/ See Vinyl Chloride--A Review of National Emission Standards (Feb., 1982), C.L. A-25.

17/ Id. at 2-11.

18/ EPA, The Cost of Clean Air and Water Report to Congress 1984, Table A5.2.4 (May, 1984).

EPA-450/3-82-003

Vinyl Chloride - A Review Of National Emission Standards

Prepared by TRW, Inc.
P.O. Box 13000
Research Triangle Park, North Carolina 27709

EPA Project Officer: Fred Porter
Emission Standards and Engineering Division

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air, Noise and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

February 1982

SPI-06134

distribution of these plants throughout the United States. (See Appendix C for identification of these plants). The number of EDC/VC plants has increased from 15 prior to promulgation of the regulation to 17 plants currently in operation. Two of the original plants discontinued operation and four new plants began operation. These new plants are identified in Appendix C. During this period the approximate VC nameplate production capacity increased from 3.1 teragrams (6820 million pounds) per year in 1974 to 3.7 teragrams (8200 million pounds) per year in 1980 (EPA, 1975; Chemical Week, 1980a).

The number of operating PVC plants has remained consistent since promulgation of the regulation. Of the 41 original PVC plants, 4 plants have discontinued operation and 3 new plants have begun operation. These newer larger plants, along with extensive expansions at several other existing plants, have resulted in an approximate increase in PVC nameplate production capacity from 2.6 teragrams (5739 million pounds) per year in 1975 to 3.4 teragrams (7600 million pounds) per year in 1980 (EPA, 1975; Chemical Week, 1980b).

2.3.2 Influence of the Standard on Industry

Promulgation of the regulation was followed by significant changes in the VC industry. These changes included plant and equipment modernization, process modifications, and redirection of some research and development resources from the product itself to the areas of environmental control. Economically, these changes were felt most acutely by the older PVC plants that had to retrofit their processes with new controls. Several EDC/VC and PVC plants were still in the design phase during development of the regulation and the engineering was altered to accommodate the new requirements.

The cost (of compliance) to the VC industry for a 10-year period (1977-1986) is estimated to be $765.7 million (1977 dollars). This includes investments, capital, operating and maintenance costs for new and existing plants (EPA, 1979).

A survey of 14 PVC producers indicated a 10-to-12 percent average loss in production capacity as a result of compliance requirements (Chemical Week, 1979). The reasons for lost capacity were due mainly to the time needed to clean reactors and purge the different systems in an

effort to reduce VC emissions prior to opening to the atmosphere. The PVC process may also need to be operated at a slower rate to strip residual VC (RVC) from PVC resins in order to reduce emissions. The production loss varies with the type of resin produced and stripping technology used.

EDC/VC plants have expended capital to comply with the regulations, mainly for add-on control equipment and modifications to processes. Furthermore, state agencies regulating hydrocarbon emissions are stimulating new technology for emission reduction. The main emphasis has been in changing from air processes to oxygen processes in the EDC process. This results in a lower volume emission to be combusted.

At the time of this review study, most of the EDC/VC and PVC plants have completed many of the modifications discussed above and are channeling their research and development resources back to product development. Relatively few plants have ceased production during the last 4 years. No EDC/VC plants have shut down; seven PVC plants have closed (four on a temporary basis). Construction of new or modified sources is currently underway in many regions.

2.3.3 Industrial Trends

From the standpoint of process and control, there is a significant trend in the industry towards automation and computerization. Among plants surveyed during the review study, processors utilizing these types of advanced systems have attained a high level of compliance.

There is a definite trend toward the use of larger reactors in the PVC industry. Economic and emission control advantages of these larger systems are discussed in Section 4.0.

The tendency to minimize the number of PVC resin grades has also been noted. The "grocery store" processor, with many small reactors producing multiple grades of resin, is leaning towards the processing of fewer grades. One reason for this change is the difficulty and amount of time required for stripping RVC from certain specialty resins (as mentioned above).

Reduction of energy consumption at EDC/VC plants is also being achieved through various process modifications. Steam consumption has been greatly reduced by Stauffer Chemical who uses the EDC reactor heat