November 17, 1983

Sherrie Arnold
Fred Hoerger
Ron Taylor
Charlie Royalty
Paul Rozas
Ken West

REVISION OF VCM STANDARD
MEETING OF VINYL INSTITUTE AND EPA

On November 15, 1983, a meeting of the Manufacturing Practices Committee of the Vinyl Institute and EPA was held in Durham, North Carolina. The meeting had two purposes -- to discuss the proposal by the Vinyl Institute to institute a numerical quantity limitation in the relief valve provision of the standard and to determine what work the contractor Radian was to do for EPA.

Attendance at the meeting was as follows:

EPA	Fred Dimmick
	Leslie Evans
	Bob Rosensteel
	Gil Wood
	Susan ~~Wood~~ Wyatt
Radian	Clint Burklin
	Karen Fidler
	Reese Howe
	John Spelling
Vinyl Institute of SPI	Roy T. Gottesman
Borden	W. Bailey Barton
Conoco	Joe Ledvina
B.F. Goodrich	W. C. Holbrook
Tenneco Polymers	Jim Kachtick
Dow	Bob Oubre

Numerical Limitation - EPA agreed that this was a viable approach, that is, the idea of allowing a set quantity limit of VCM released through relief valves per million pounds of production. They were concerned, however, that certain folks (Environmentalists) might regard this as backing off from the "zero" allowable which they have interpreted in the present standard. The Vinyl Institute's original proposal was 50 pounds per million pounds production for PVC plants and 25 pounds per million production for VCM plants.

The numerical values were to be based on a 12 month rolling average, that is, the total relief valve discharge pounds for the previous 12 months divided by the millions of pounds of production for the same period. The numbers would be updated each month by dropping one month and adding the new month. Attachment A shows the data in this form as compiled by the Vinyl Institute. The company names were omitted for confidentiality. I have marked our two plants which were submitted.

EPA's main concern in a calculated relief valve discharge was the uncertainty in the duration of release. They asked us to explore the possibility of some timing device for valve opening. We indicated that it was very unlikely something could be developed which would be reliable but we would think about it. They (EPA) suggested that one number which could be used that had no subjectivity was number of releases per 1000 batches of PVC or per million pounds of production. The problem with that (which everyone recognized) was the quantity per release could vary significantly. A combination of the two ideas might be an acceptable approach, that is, if the release were of a long enough duration that the time could accurately be measured by instrument charts, the quantity would be calculated, and if too short a duration it would not be calculated. The standard might then be based on a VCM pound limit and a number of discharges limit. EPA requested we gather additional data so that they could determine if acceptable limits could be established. We agreed to furnish the data as listed in Attachment B. Vinyl Institute will tabulate the numbers which will then be forwarded to EPA without company identification.

EPA had accumulated the relief valve data from Region VI which includes all our plants. The data is Attachment C.

The Radian folks then outlined their work under EPA's contract. They plan to visit a number of plants, mostly the new plants and plants with low VCM release history to determine how those plants are preventing the releases. The plants they presently plan to

visit are Goodrich at Pedrickstown, New Jersey, Shintech at Freeport, Formosa at Point Comfort, Tenneco at Pasadena, and Borden at Illiopolis, Illinois. The subject of secrecy agreements then came up and EPA revealed that their legal staff had advised that EPA's contractors not sign secrecy agreements with companies. Instead, a "Memorandum of Understanding" had been drafted by EPA's legal staff to cover confidentiality issues. The spokesmen for Goodrich and Borden, two of the plants to be visited, both objected and said secrecy agreements signed by Radian would be required. The subject remained at stalemate for the time being. A copy of the EPA proposed agreement is in Attachment D.

The timing of Radian's work is as follows:

> Visit of plants complete by mid-December, 1983 for finding out release reduction techniques.
>
> Put a package together for review by EPA by February, 1984.
>
> Invite Vinyl Institute to review and comment by March or April, 1984.
>
> Have revisions ready to go into Federal Register by end of 1984.

I will keep you informed of the status as it becomes available.

Robert R. Oubre

Robert R. Oubre
VCM Technology Center

pm

ATTACHMENT A

TWELVE MONTH ROLLING AVERAGE INDEX[1]
POUNDS VCM RELEASED PER MILLION POUNDS PVC PRODUCTION

PVC Plants	1982					1983								
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
A	0.65	0	0	0	0	0	0	0	0	0	0.5	0.5	0.5	
B	2.4	2.3	1.0	.7	.7	5.0	4.9	4.9	4.6	4.5	4.1	4.0	10.3	
C	85	84	4.9	4.8	4.8	2.5	2.9	2.9	2.9	2.9	2.9	2.9	1.6	
D	93.7	93.0	177.0	176.0	191.0	225.0	219.0	219.0	210.2	158.2	160.9	147.3	146.9	
E	0	0	0	0	0	0	0	3.2	3.2	3.1	3.1	3.2	7.4	
F	11	10	10	10	8	8	8	7	12	11	16	10	10	
G	84	0	0	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.02	0.02	0.02	
H	2	0.3	0.2	0.2	0.2	0.2	0	0	0	0	0	0.2	3.0	
I	6.1	6.5	6.9	0	0	47.7	47.8	47.4	48.2	48.2	46.3	44.6	44.8	
J	3.6	0	0	0	0	0	0	0	0	0	0	0	0	
K	1.38	1.38	2.66	3.53	4.87	14.5	Plant Closed		-	-	-	-	-	
L	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.16	1.2	
M	328.1	289.8	125.5	146.6	151.4	150.4	97.7	207.4	284.7	287.8	275.1	279.9	255.0	
N	2.4	2.1	1.4	1.4	1.3	1.4	1.0	1.0	1.7	1.4	1.4	1.3	1.4	
O	18	17	15	15	14	14	13	3	0	0	0	0	0.06	
P	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0	0	0	0	0	
Q	0	0	0	0	0	0	0	0	0	0	0	0	0	
R	40.6	38.1	38.3	37.5	36.5	35.5	34.9	34.4	33.9	33.5	34.1	39.8	8.2	
S	202	208	199	198	115	122	117	113	110	106	103	8	8	
Million Pounds Production[2]	260.6	265.2	265.2	262.5	272.5	279.3	278.6	284.0	280.4	284.2	288.9	295.6	298.2	

(1) Each monthly index entry = The sum of all relief valve, rupture disc, and manual vent VCM releases for the previous 12 months divided by the sum of all PVC production at the plant for the previous 12 months.

(2) Each monthly entry represents the sum of the previous 12 months PVC production for plants A through S divided by 12.

Source - The Vinyl Institute November 1983.

TWELVE MONTH ROLLI[redacted]VERAGE INDEX[1]
POUNDS VCM RELEASED PER MILLION POUNDS VCM PRODUCTION

VCM Plants	1982 Aug.	Sept.	Oct.	Nov.	Dec.	1983 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
A	4.8	4.7	2.3	2.3	2.3	2.3	2.3	2.5	2.9	5.8	5.6	3.1	3.1
B	2	0.2	0.2	0.2	0	0	0	0	6	6	6	5	5
C OCD	6.6	6.5	6.3	18.8	18.3	18.0	17.8	17.8	16.7	15.6	15.5	15.0	10.6
D	0.4	0.13	0.13	0.13	0.13	0.12	0.12	0.13	0.12	0.12	0	0	0
E	23.34	26.98	26.96	26.82	4.11	4.03	4.05	6.65	7.53	7.37	7.08	6.91	7.50
F	123	124	123	122	58	59	59	61	64	62	0	0	.04
G VCM I-LA.	3.4	3.4	24.3	23.2	23.9	23.4	23.5	23.5	32.9	34.0	34.2	34.3	31.1
H	2.60	2.61	2.58	2.71	2.87	2.81	2.90	2.94	0	0	0	0	0
I	0.40	0.37	0.35	0.33	0.31	0.31	0.85	0.78	0.47	37.92	37.38	36.57	36.57
Million Pounds Production[2]	355.5	360.8	370.5	374.4	375.3	379.6	375	370.1	364.8	376.6	375.3	382.1	387

(1) Each monthly Index entry = The sum of all relief valve, rupture disc, and manual vent VCM releases for the previous 12 months divided by the sum of all VCM production at the plant for the previous 12 months.

(2) Each monthly entry represents the sum of the previous 12 months VCM production for plants A through I divided by 12.

Source - The Vinyl Institute November 1983.

R&S 028869

R&S 028870

ATTACHMENT B

PVC PLANTS

TWO-YEAR DATA
ON A MONTHLY BASIS

August 1981 - August 1983

Plant	Process				
	Susp.	Disp.	Mass	Latex	Non-Reactor Other Source
No. of releases/10^6 PVC/mo.					
Lbs. released/10^6 PVC/mo.					
No. of releases (<10,000 gal.)/10^6 PVC/mo.					
No. of releases (>10,000 gal.)/10^6 PVC/mo.					
Lbs. released (<10,000 gal.)/10^6 PVC/mo.					
Lbs. released (>10,000 gal.)/10^6 PVC/mo.					
No. of releases (<10,000 gal.)/1000 batch					
No. of releases (>10,000 gal.)/1000 batch					
Lbs. released (<10,000 gal.)/1000 batch					
Lbs. released (>10,000 gal.)/1000 batch					
No. releases/mo.					
Lbs. released/mo.					

VCM PLANTS

TWO-YEAR DATA
ON A MONTHLY BASIS
(All 61.65(a) Sources)

August 1981 - August 1983

No. releases/10^6 VCM/mo.

Pounds VCM released/10^6 VCM/mo.

No. releases/mo.

Pounds released/mo.

ATTACHMENT C

REGION VI VCM/EVD DATA SUMMARY - BY YEAR

COMPANY	LOCATION	LB/MM LB PRODN							LBS ANNUALLY							NUMBER DISCHARGES						
		1977	1978	1979	1980	1981	1982	1983	1977	1978	1979	1980	1981	1982	1983	1977	1978	1979	1980	1981	1982	1983
EDC/VCM PLANTS																						
DIAM SHAM	LAPORTE		1	3	2	5	0	0		638	2638	1967	2961	0	0		0	6	3	5	0	0
DOW CHEM	OYSTERCRK	13		0	1	0	26	0	7300		0	485	9	12240	0	3	1	0	2	1	4	0
DOW CHEM	FREEPORT	5	0						800	0						1	0					
FORMOSA	PTCOMFORT						1							40	5160						1	3
GA-PACIFIC	PLAQUEMINE					0	0						5070	0	84					2	0	1
BORDEN	GEISMAR	0	4	21	10	0			0	1170	6870	3220	0			0	1	5	8	0		
CONOCO	WESTLAKE	0	0	2	8	6	3		0	0	1530	4490	2740	1110	1230	0	0	1	3	4	4	2
FORMOSA	BATONROUGE	0	0	2	14	2	23		0	0	660	3300	320	11000		0	0	5	3	4	2	0
SHELL	NORCO	17	0	9	0	0	3		9970	24	6000	0	0	1150		7	2	2	0	0	1	
SHELL	DEERPARK	44	10	23	0	0	0	0	29700	7500	17700	0	1	80	0	5	1	5	0	1	1	0
DOW CHEM	PLAQUEMINE	0	21	5	0	1			340	23200	6280	450	1030			3	5	3	3	1		
MIN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX		44	21	23	14	6	26	0	29700	23200	17700	4490	5070	12240	5160	7	6	6	8	5	4	3
«AVG»		10	4	8	4	2	7	0	6014	4067	5210	1739	1348	3203	1079	2	2	3	3	2	2	1
PVC PLANTS																						
TENNECO	PASADENA		19	4	13	5	2			4297	1450	4350	2550	650	400		6	7	13	10	8	3
BFGOODRICH	DEERPARK	1	46	1	0	1	16		157	10249	120	0	167	2605		1	1	1	0	1	2	6
SHINTECH	FREEPORT	0	0	0	5	0	0		0	0	0	1213	0	0	100	0	0	0	1	0	0	1
UCARBIDE	TETASCITY	0	27	74	0	0	0	0	0	4584	12976	0	0	0	0	0	1	2	0	0	0	0
FORMOSA	PTCOMFORT														3930							2
CERTAINTEED	LAKECHAS	0	0	0	0	1	0		0	0	0	0	105	0		0	0	0	0	1	0	
CONOCO	OXCITY	0	470	400	67	0			0	80000	71500	10000	0			0	2	3	1	0		
OCCIDENTAL	ADDIS			0	34	2	0				0	5030	2170	41				0	23	8	1	
GA-PACIFIC	PLAQUEMINE		10	19	150	0	29			3000	5660	37900	176	13000	19	1	1	3	9	3	5	1
ETHYL	BATONROUGE	278	520	160	290	65	89		38300	77500	25600	37300	11700	16000		48	51	14	9	9	6	
BFGOODRICH	PLAQUEMINE	180	160	22	31	100			27500	26900	3700	4700	13100			11	15	2	2	5		
DIAM SHAM	DEERPARK		35	11	153	1	51			6356	1989	51705	552	4153		31	12	3	6	2	5	
PPG	LAKECHAS	2	0	0	0	21	28		760	109	0	0	12700	15900		6	2	0	0	19	3	
MIN		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MAX		278	520	400	290	100	89	0	38300	80000	71500	51705	13100	16000	3930	48	51	14	23	19	8	3
«AVG»		57	117	58	62	17	21	0	8340	19363	10250	12683	3602	5235	990	9	8	3	5	4	3	1

Data through 8/83
Prod. rate based on Industry Std. Capacity Op'n

BREAKDOWN OF RVDS
1977 - 1982

REASON	CONTROL	EDC/VCM PLANTS PERCENT BY NUMBER	EDC/VCM PLANTS PERCENT BY WEIGHT	PVC PLANTS PERCENT BY NUMBER	PVC PLANTS PERCENT BY WEIGHT
OPERATOR ERROR	OPERATOR TRAINING/SOP	43.8	45.2	30.5	42.2
PREMATURE RELEASE	MAINTENANCE PROGRAM Q/A	6.1	4.3	9.0	32.5
INSTRUMENT MALFUNCTION	MAINTENANCE/REDUNDANT INSTR.	21.5	19.6	26.9	18.5
POWER FAILURE	BACK-UP POWER	3.8	11.0	1.2	1.4
EQUIPMENT FAILURE		6.9	10.6	20.3	1.8
UPSET CONDITIONS		8.5	4.2	6.0	0.6
INCORRECT SRV SETTING		3.1	3.2	0	0
UNKNOWN/NOT AVAILABLE		6.2	1.8	6.0	2.9
TOTAL OF DISCHARGES		130	213,000 LBS	167	366,000 LBS

ATTACHMENT D

MEMORANDUM ON CONFIDENTIAL TREATMENT OF CERTAIN INFORMATION FOR USE WITH SITE VISITS BY EPA AUTHORIZED CONTRACTOR REPRESENTATIVES UNDER AUTHORITY OF SECTION 114 OF THE CLEAN AIR ACT

1. Pursuant to the provisions of Section 114 of the Clean Air Act, as amended, (source) (hereinafter "the source") will provide, or give access to, information requested by the Environmental Protection Agency (EPA) in the course of carrying out its responsibilities. Such information and such access will be provided to EPA and to its duly authorized representative (contractor) (hereinafter "the contractor") designated by EPA to assist EPA in carrying out such responsibilities pursuant to Contract No. _____ with EPA. The information requested may be either documentary (e.g., records, photographs or charts) or non-documentary (e.g., oral communications, taking of photographs, or visual observations). EPA and the contractor recognize that the source may consider the information so provided, or some part of it, to be confidential within the meaning of Section 114 and 18 U.S.C. 1905. The source may assert a claim of confidentiality under the procedures established in Part 2 of Title 40 of the Code of Federal Regulations (40 CFR Part 2) by noting such claim on documentary material provided to the contractor or to EPA. The contractor will note such claim when submitting the information to EPA. The EPA will note such claim when submitting such information to the contractor. Moreover, the source may notify the contractor or EPA that it considers the non-documentary information provided to EPA or to the contractor to be confidential. The contractor will note said claim of confidentiality in any reports or documents submitted to EPA which utilize such non-documentary information. The EPA will note said claim of confidentiality in any reports or documents submitted to the contractor which utilizes such non-documentary information. Any material

or information claimed as confidential will be treated by the contractor as confidential in accordance with its contract and will be treated by EPA in accordance with the provisions of 40 CFR Part 2. Any material or information for which a claim of confidentiality is not made may be made available to the public by EPA without notice to the source.

2. The provisions in the contractor's contract with EPA concerning the use and disclosure of confidential information are included therein for the benefit of, and shall be enforceable by, both EPA and the source.

The provisions of Contract No. _____ between EPA and the contractor provide:

a. The contractor and its employees will: (i) use the information claimed to be confidential only for purposes of carrying out the work required by the contract; (ii) not disclose the information to anyone other than EPA employees without the prior written approval of the Assistant General Counsel for Contracts and General Administration; and (iii) return to the EPA Contracting officer all copies of the information, and any abstracts or excerpts therefrom, upon request by the Contracting Office, whenever the information is no longer required by the contractor for the performance of the work or upon completion of the contract.

b. The contractor will obtain a written agreement to honor the provisions of paragraph 2(a) from each of its employees who will have access to the information, before the employee is allowed access.

c. The contractor will not use any information claimed to be confidential to compete with the source.

d. Before entering into any subcontract that will involve either the disclosure to a subcontractor by the contractor of information claimed to be confidential, or the collection of information by a subcontractor, the contractor will obtain the written consent of the EPA Contracting Officer, after a written determination by the appropriate EPA program office.

3. Any subcontractor who will have access to the information is subject to the restrictions set forth in this memorandum.

4. It is intended that this memorandum be consistent with and not exceed the provisions of 40 CFR Part 2 and the provisions of Contract No. _____. This memorandum does not address information not obtained from the source. Nothing in this memorandum relieves the contractor of any liability it may independently have to the source as a matter of statutory or common law from injury to the source arising from the contractor's release of information in a manner which exceeds its authority under 40 CFR Part 2 and its contract with EPA.

U.S. Environmental Protection Agency

By: _____

Date: _____

Company

By: _____

Date: _____

Contractor

By: _____

Date: _____